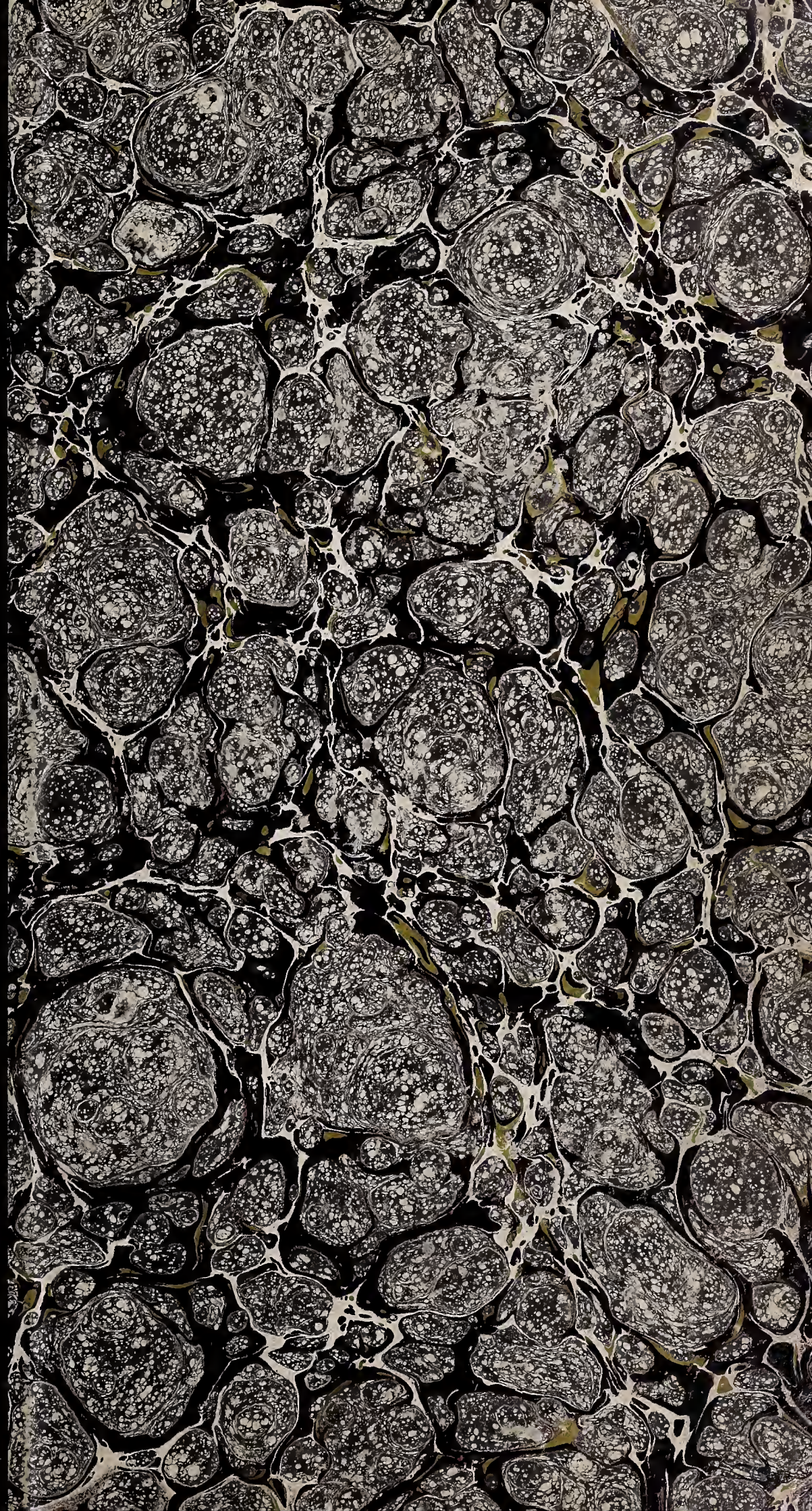




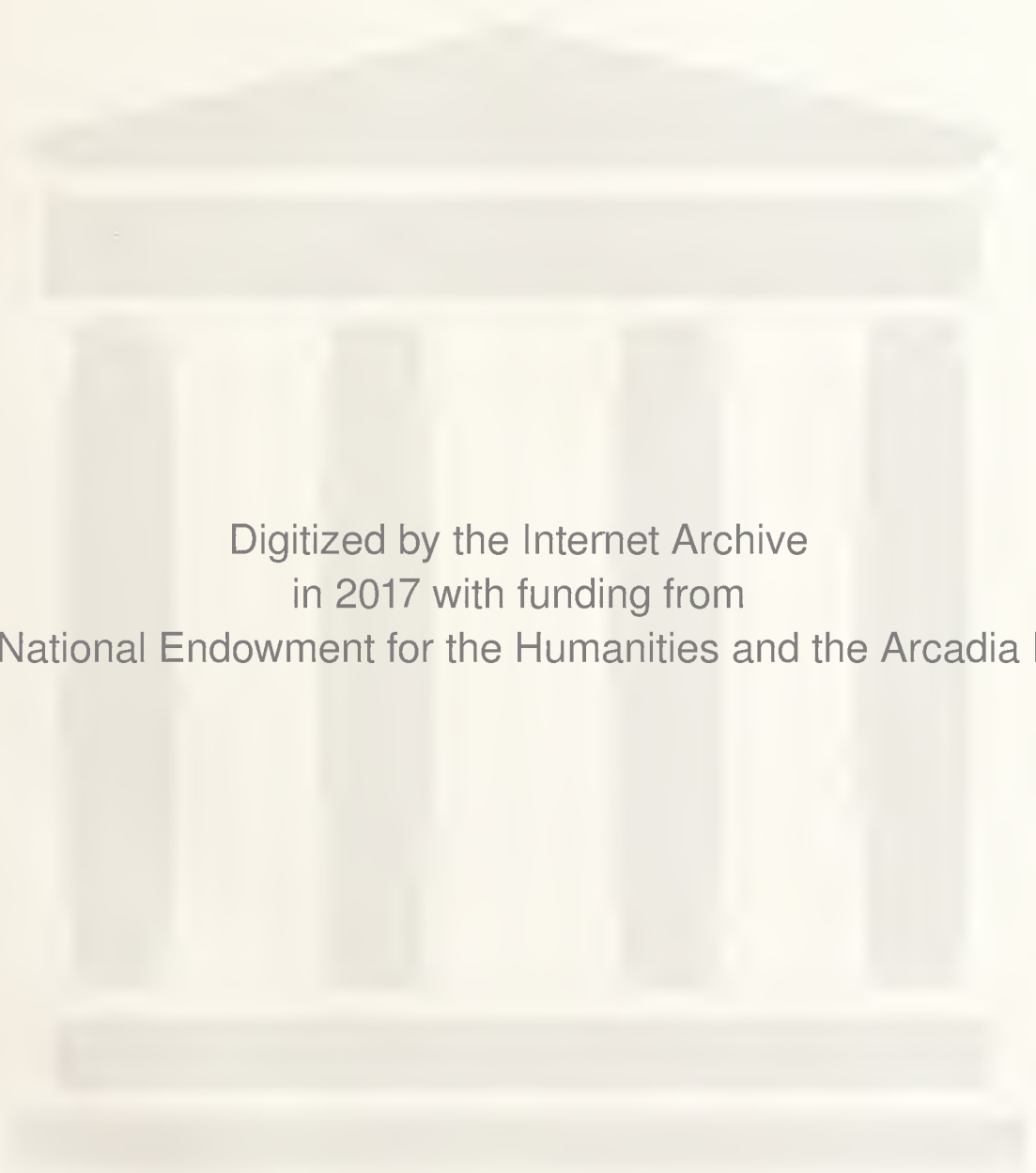
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LARKIN SMITH, Editor and Secretary

J. F. GALLAGHER, M. D., Associate Editor

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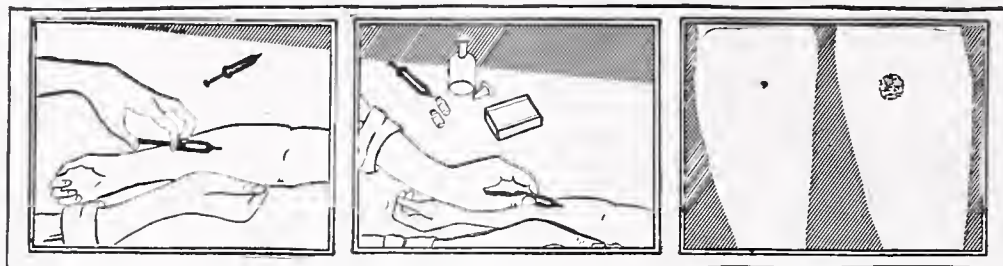


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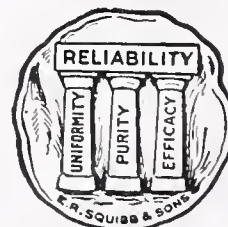
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NASHVILLE, TENN., MAY, 1922

NUMBER 1

THE GREAT VALUE OF AUTOPSIES.*

By B. T. TERRY, M. D., DEPARTMENT OF PATHOLOGY, VANDERBILT UNIVERSITY, NASHVILLE, TENN.

A number of years ago a man went about this country delivering a lecture which proved so popular that he is said to have received considerably over one million dollars for delivering it. His topic was "Aeres of Diamonds." In this lecture Dr. Russel H. Conwell attempted to show that there are wonderful opportunities around each and every one of us, and that no one need have more than a seeing eye, an active brain, and a desire to work hard, in order to achieve success. He showed by numerous and forceful illustrations how opportunities close to us and of great value are often absolutely overlooked.

An autopsy is an opportunity. It is an opportunity for you to gain complete and exact knowledge about the condition of your patients who die. Our clinical methods are not perfect. At best we know our patients only in part. In an article entitled "Diagnostic Pitfalls" (Journal of American Medical Association, 1912, LIX, 477) Dr. Richard Cabot showed that while some of the best physicians in the country might make a diagnosis of diabetes and typhoid fever correctly, a little more frequently than nine out of ten times, these same physicians failed to recognize abscess of the liver and acute pericarditis, eight times out of ten. He showed further that during life even such important diseases as acute tuberculosis and aneurysm of the aorta, are overlooked just about as frequently as they are discovered.

*Read with lantern slide demonstration before the Tennessee State Medical Association, Memphis, April 13, 1922.

While the autopsy does not invariably reveal the cause of death, the opportunities at autopsy for obtaining exact, useful information are ever so much greater than those the clinician has. For this reason it is obvious that the autopsy gives information which should be of the greatest value to the clinician.

Sir William Osler knew the value of autopsies and was a frequent attendant in the autopsy room. Much of his wonderful knowledge of medicine was obtained by following his patients to the necropsy table. Other well known men—Bright, Addison, and Hodgkins, owe their fame in large part to knowledge obtained at the autopsy table.

If men like these have profited so greatly, every physician should likewise be greatly benefitted by attending autopsies on his own patients. To show as clearly as I can the great value of autopsies, I will now compare in five cases the clinical findings with the autopsy findings. You will observe that in these cases the autopsy does one of three things:

First, it confirms the clinical diagnosis, but adds features which were not diagnosed with certainty clinically.

Second, in addition to confirming the clinical diagnosis, the autopsy reveals very important lesions not even suspected clinically.

Third, it makes the diagnosis, when, during life, exact diagnosis was impossible.

Case 1.—Clinical—Autopsy 229.—Patient A. W., black, female, 23 years old, with clinical diagnosis of mediastinal tumor, probably sarcoma. The present illness began four months

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ago with cough and bulging of the left breast. The right breast began to enlarge two or three days before admission. After admission the girl sat up in bed day and night and panted for breath. Her mammary glands grew to enormous size, and the patient gradually became weaker and weaker. She died in the sitting posture four days after admission.

PROVISIONAL ANATOMICAL DIAGNOSIS.—AUTOPSY 229.

1. Lymphosarcoma of mediastinum.
2. Direct extension of tumor through interspaces to grow over upper half of sternum and to left of sternum.
3. Extension direct into wall of pericardial sac, into both lungs, and to upper and lower surfaces of the diaphragm.
4. Extensions posteriorly, probably causing obstruction of the thoracic duct.
5. Edema of the subcutaneous tissue of both breasts, of the trunk, and of the left foot.
6. Bronchopneumonia, bilateral.
7. Edema and atelectasis, left lung.
8. Emphysema and atelectasis, right lung.
9. Chronic pleuritic adhesions.
10. Hydrothorax, bilateral.

Cause of Death.—Lymphosarcoma, apparently originating in the mediastinum and spreading from there in all directions.

Case 2—Clinical—Autopsy 232.—Patient J. J., black, female, 38 years old. Clinical diagnosis, pelvic abscess and fibroids.

History.—Patient entered hospital for some pelvic pathology, diagnosed abscess. A vaginal puncture was made and a large amount of pus was obtained. The wound drained intermittently for some time, but the abdominal tumor persisted. The patient continued to run a septic temperature and to go down hill. She gave no history of gastric disturbances, but 28 days after the vaginal operation she suddenly vomited a large quantity of blood and her stools were subsequently said to be like tar. She developed considerable tenderness in the epigastrium, but owing to her poor condition no operative measures were undertaken. She died three days after the vomiting of the blood.

Question.—What was the source of the blood vomited?

PROVISIONAL ANATOMICAL DIAGNOSIS.—AUTOPSY 232.

1. Duodenal ulcer, perforating. Base of ulcer formed by head of pancreas.
2. Ruptured pancreatic-duodenal blood vessel (cause of large hemorrhage).
3. Profound anemia.
4. Pelvic abscess.
5. Purulent perimetritis.
6. Purulent peritonitis.
7. Old chronic pelvic adhesions, especially on right side and above symphysis pubis.
8. Right fallopian tube replaced by mass of firm white scar tissue.
9. Left fallopian tube, hydrosalpinx.
10. Terminal septicemia.
11. Pyonephritis.
12. Small non-palpable intramural fibromyoma, right side.
13. Healed pulmonary tuberculosis.

Case 3.—Clinical—Autopsy 238.—Patient, T. T., 75 years old, black, male, farmer, with clinical diagnosis of carcinoma of both breasts. History abstract. Patient has had growth in right breast for nearly 20 years. Had rheumatism 20 years ago and pneumonia 4 years ago. Present illness began a little over two years ago when patient noticed a small growth the size of a bean near the right nipple. About two years ago this growth became painful and blood oozed from the surface over the nodule. One year ago the nodule in the right breast was the size of a goose egg. The patient is said to have received radium treatment and the tumor decreased in size. Six months ago the patient became edematous. His Wassermann is negative.

Present examination. There is a hard, indurated mass around the right nipple which is retracted. The left breast shows similar though less pronounced changes. Both breasts were removed and both showed carcinoma. The patient died five days after operation. The autopsy confirmed the clinical diagnosis in part, but revealed many things not diagnosed previously.

PROVISIONAL ANATOMICAL DIAGNOSIS.—AUTOPSY 238.

1. Chronic, apical, pulmonary tuberculosis, bilateral, largely healed.



Duodenal ulcer which has perforated against head of pancreas. In so doing it opened a blood vessel towards which an arrow points in the illustration.



Esophagus slit longitudinally by aneurysm. The probe passes into the left bronchus from an abscess cavity which opened into the esophagus. The arrows lie in the abscess cavity.



Heart lying in pericardial sac greatly thickened by a lymphosarcoma (Lymphoblastoma).



Syphilitic aorta showing two aneurysmal dilations. In the larger sac is seen a thrombus which only partly fills it. The thrombus overlay the right bronchus protecting it from pressure. The part of this sac containing no thrombus overlay the left bronchus which the aneurysm collapsed and later perforated.



Trachea and right and left bronchi opened posteriorly. The left bronchus is distorted and perforated. By this perforation it communicated also with the esophagus which also was perforated by the same aneurysm. Between esophagus and the left bronchus lay an abscess cavity.

2. Focal areas of miliary tuberculosis of left lung with tuberculous bronchopneumonia and with cavity formation.

3. Acute miliary tuberculous pericarditis.

4. Acute miliary tuberculosis of the diaphragm.

5. Acute miliary peritonitis.

6. Tuberculous mediastinal lymphadenitis.

7. Extensive burrowing cold abscess of the left hand. (Tubercle bacilli demonstrated in stained smears.)

8. General cachexia.

9. Chronic obliterative pleurisy, bilateral.

10. Chronic obliterative pericarditis.

11. Periesophageal lymphadenitis.

12. Peribronchial lymphadenitis.

13. Chronic perisplenitis.

14. Chronic hepatitis.

15. Chronic peritoneal adhesions binding the intestines together.

16. Hypertrophy of heart.

17. Atheroma of coronaries, aorta, and aortic leaflet of the mitral value.

18. Diffuse dilation of the thoracic and abdominal aorta.

19. Emphysema, edema, and congestion of both lungs.

20. Cystic kidneys.

21. Single smooth walled cyst in liver.

22. No remaining evidence of carcinoma (although tissue removed surgically from both breasts a short time before death had shown scirrhous carcinoma).

Cause of Death.—General cachexia resulting from carcinoma of both breasts and from active tuberculosis of the left lung, pericardium, and peritoneum.

CASE 4:—CLINICAL. AUTOPSY 212.

Patient M. W., black, female, 49 years old. Clinical diagnosis: Syphilis and neoplasm of mediastinum and right lung. History.—Patient complains of choking spells for last six weeks. Gives syphilitic history with repeated miscarriages. Present illness began with sudden attacks of coughing and dyspnea with some pain in both sides of the chest. Shortly after onset she observed a swelling above the left clavicle. The veins on the left side of the neck and thorax are distended. There is slight edema of left side of the chest and left arm.

The tumor above the left clavicle is soft and non-pulsating. There is dullness and absence of breath sounds over entire left lung except at extreme base and apex. Heart appears displaced to left. Patient coughs up white, frothy sputum, never any blood. The difficulty in swallowing increased, and shortly before death the patient refused to swallow at all, as each attempt brought on a violent spell of coughing.

PROVISIONAL ANATOMICAL DIAGNOSIS.—AUTOPSY 212.

1. Syphilitic aortitis.

2. Aneurysm of arch of aorta overlying both bronchi.

3. Thrombus in aneurysm over right bronchus, apparently protecting it from pressure.

4. Pressure necrosis, complete collapse, and perforation of left bronchus.

5. Pressure necrosis with slit-like perforation of the esophagus.

6. Mediastinal abscess cavity lying over vertebrae and communicating with esophagus and left bronchus.

7. Complete atelectasis and bronchopneumonia of the left lung.

8. Compensatory emphysema, hypostatic congestion and hypostatic pneumonia of the right lung.

9. Acute serofibrinous pleurisy of the left lung.

10. Acute fibrinous pleurisy of the right lung.

11. Slight hydropericardium with displacement of the heart to the left.

12. Enlarged lymph glands above clavicle on the left side, in suprasternal notch, and in the mediastinum on the right side over the aneurysm.

13. Petechial hemorrhages beneath the epicardial covering of the aorta.

14. Petechial hemorrhages beneath the pleura of the left lung.

15. Anthracosis of both lungs.

16. Arteriosclerosis of coronaries and aorta.

17. Congestion of the kidneys.

18. Fatty infiltration of the liver.

19. Chronic adhesions between the large intestine and uterus, and between the great omentum, uterus, and bladder.

20. Chronic salpingitis with adhesions.

21. Fibroids of the uterus (subserous and intramural).

22. Senile atrophy of the ovaries.

Cause of Death.—Bronchopneumonia due to pressure necrosis of the left bronchus which communicated with a cavity in the posterior mediastinum which in turn communicated with the esophagus. Water taken from the esophagus into this cavity and then into the left lung which was found to be the seat of bronchopneumonia as well as being atelectatic.

CASE 5.—CLINICAL. AUTOPSY 209.

The patient, C. E. (white) male, 39 years old, foundryman, had an attack of pneumonia four months before his death and was in the hospital eight weeks. He complains of shortness of breath, night sweats, and general debility since the attack of pneumonia. The patient has a cough but has brought up no blood. He has had pain in the left side of his chest as well as chills and fever of a septic nature. Bowels and kidneys are apparently normal. There is no edema or other complaint.

He came into the office of a prominent Nashville physician for examination. There was lack of expansion and increased fremitus over the left chest. On percussion there was absolute dullness over the upper lobe of the left lung posteriorly and anteriorly. The patient got up from the examination table, dressed himself, and the physician was about to draw blood for a blood count when the patient suddenly began to cough and spat up a mouthful of blood. He turned to the doctor and said, "Doctor, this is the first blood I have ever brought up." He coughed almost continuously, bringing up altogether about one-half pint of blood. During this coughing spell, he became intensely cyanotic. He was put back on the table on his left side. Artificial respiration was resorted to and a hypodermic of morphine was given. The throat was mopped out and the patient seemed to clear up somewhat. Shortly afterwards, however, he went into a second fit of coughing, and brought up no more blood. He became intensely cyanotic and died in about five minutes after the attack began.

What was the cause of this man's death? What was wrong with the left side of his

chest? Where did the blood come from and how was the cyanosis to be explained?

PROVISIONAL ANATOMICAL DIAGNOSIS.—AUTOPSY 209.

1. Fibrosis of the left lung with multiple abscesses.
2. Emphysema of the right lung.
3. Multiple hemorrhage areas in right lung (due to the aspiration of red blood cells and pus cells).
4. Chronic fibrous pleurisy of the right lung as well as acute fibrinopurulent pleurisy of both lungs.
5. Serous pleurisy of left lung with effusion (about 400 cc. of fluid).
6. Anthracosis of both lungs.
7. Hydropericardium.
8. Marked atheroma of the aorta from arch to bifurcation with slight aneurysmal dilation of the arch of the aorta.
9. Atheromatous ulcers in the aorta above the bifurcation.

Cause of Death.—Suffocation induced by an abscess in the left lung opening into a blood vessel. The blood and pus from the left lung were aspirated into the right emphysematous lung plugging the smaller bronchioles, in this way preventing respiration.

May I ask a few personal questions? How many autopsies have you witnessed since you graduated? How many autopsies have you seen on your patients? Do you not think you would be a better practitioner of medicine if you saw more autopsies? Would not a file in your office of carefully prepared autopsy protocols illustrated with photographs and microphotographs, help you in the preparation of papers to be read before medical societies? Would not such a file be of inestimable value to you in many other ways?

If you really want such a file I believe you can have it and practically without cost except for a little time in interviewing the relatives and in witnessing the postmortems.

To secure an autopsy it is necessary first of all to have the written consent of the nearest of kin. This in many cases is not so hard to obtain as you might think. As the family physician, you probably have great influence with the relatives. Ask for the permit as soon as possible after death or, in certain cases, before death. Experience shows that it is ex-

tremely difficult to secure autopsies after the body is in the hands of the undertaker. In one instance in Brooklyn, N. Y., I accompanied a young man who secured nine permits for autopsies in one day. He did not fail once where he reached the house before the undertaker was in charge of the body or where the family was not Jewish.

This young man gave me the following rules for securing autopsies: "First, select the 'boss' of the family. You can usually tell who this is. Talk to that person alone. Others in the room distract attention and often work against you.

"Second, gain the favorable attention of the one talked to. It is important to ask questions the answers to which will be in the affirmative. Get the person in the habit of saying 'Yes'. By asking questions now and then, see that you are understood and that the person talked to is being convinced.

"Third, point out the possible advantages of the autopsy to the family. Other members may subsequently suffer from the same trouble. The autopsy will make it easier to treat the living successfully.

"Fourth, assure the family that the body will not be mutilated. Avoid the use of words like "cut" or "cutting" which may arouse unpleasant associations in the minds of the relatives.

"Fifth, after you get the 'boss' on your side, go after the nearest of kin unless this happens to be the 'boss.' Don't ask at once for the autopsy permit unless you are reasonably sure that you will have a favorable answer. Lead up gradually to the request. When the answers to your other questions show you the psychological moment has arrived for the main question, place before the person an autopsy permit filled out in full and get the signature at once on the line reserved for the signature. If possible have a witness also sign the permit.

"Sixth, after you get the permit signed by the nearest of kin, leave as promptly as is seemly. If you stay, the person who signed may afterwards wish to withdraw consent." These are practical rules for securing autopsies.

When you have secured the written permit several courses are open to you.

First, you may perform the autopsy yourself.

Second, you may call in a competent pathologist to assist you.

Third, you may have the body sent to a pathological laboratory where the autopsy can be performed more satisfactorily, where the necessary photographs can be taken, and where the autopsy protocol can be dictated and recorded accurately in full as the autopsy is done.

This latter plan is usually by far the most satisfactory. The correct performance of an autopsy and the interpretation of the results macroscopically and microscopically require considerable knowledge and training as well as equipment and facilities not ordinarily at the disposal of the physicians in charge.

If you decide on the third course you should send to the pathologist not only the autopsy permit but an abstract of the history of the case. The history is often as important to the pathologist as it is to the clinician.

To prevent post mortem changes from taking place the autopsy should be performed soon after death. If a day or so must intervene before the autopsy can be performed, the body should be kept cold, if necessary by packing ice around it.

The Department of Pathology of Vanderbilt University is not competing with commercial or other pathologists for autopsy work. It needs autopsies, however, for teaching purposes and proposes for the present to perform in its Laboratories free of charge autopsies on charity patients, and, at the conclusion of the autopsy, to see that the bodies are properly embalmed without cost to relatives or physicians shipping the body. The Department does not, however, pay any transportation or other charges.

To the physician in charge of the case two complete protocols are furnished free, one protocol for his own use, the other for the family if the physician desires to send the protocol to the family. All results of examinations are regarded as confidential. All inquiries from relatives will be referred to the physician in charge. In especially interesting cases the protocols are illustrated with photographs.

Those interested in securing the performance at Vanderbilt University of autopsies on charity patients should communicate promptly with the Professor of Pathology either at his office, 700 Fifth Avenue, S., (Telephone M. 1736), or at his residence, 2001 Peabody Place, (Telephone H. 2437), Nashville, Tenn.

Definite arrangements for an autopsy must be made before the body is shipped. Unless the proper arrangements for the autopsy are made in advance, the case will not be accepted.

If the cases here discussed show the value of post mortem examinations will you not resolve now to make a determined effort in the

future to secure autopsies on all your patients who die? Say over and over to yourself, "I will see more autopsies." **Be sure to ask for a permit the next time a patient of yours dies.** If you go about it right, you will probably secure the permit. If you fail once, profit by the mistake you may have made and ask again for a permit when your next patient dies. Cultivate the desire to see autopsies, and you will be able to see them.

For permission to publish the clinical extracts given in this paper my thanks are here expressed to Dr. O. N. Bryan, Dr. J. Owsley Manier, Dr. A. W. Harris, Dr. Harlin Tucker, and Dr. R. R. Brown.

PRESIDENT'S ADDRESS AT 1922 MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION.

BY WM. BRITT BURNS, M. D., F. A. C. S., MEMPHIS, TENN.

It is with extreme pleasure and much pride that I offer you my friends and brothers in the guild a word of thanks for the great honor you have done me and my family in having elected me your President for the year now closing. Knowing well the high standards set by my distinguished predecessors, I have been bewildered by a deep sense of obligation.

I am glad also that I may utter an expression of greeting and welcome at the same time. It is good that you have come to labor with us for a season. We hope that our treatment of you will reflect only hyperpyrexial hospitality. Such is the intent and purpose of our desires.

Arrangements have been made to this end.

The swan-song is not sung when the singer is yet "hitting on all six." Still one may, if one has blistered one's heels at the fires of thirty summers or yet silvered ones hair by the snows of thirty winters in the "toil and trouble" of the art, offer some word, some sign or token to those who follow on.

Some twenty years ago, there rose up amongst us a person of determined mien, who came crying with a loud voice, saying "For-sake not clinical methods for laboratory methods." "Seek ye knowledge while it yet may be found through the fingers and the eyes and the ears and the nose." "Look not upon the

microscope which magnifieth and maketh large, nor the test tube which burns and boils and maketh a test; until ye have found knowledge through thy fingers, eyes and ears."

Are clinical methods less scientific because of employing the senses than are methods wherein laboratory apparatus or test tube are used?

Now then comes one Jno. B. Deaver to say that: "It is well to bear in mind that the new is not always the best, nor is youth always wiser than age."

Who is there in our profession that has not seen many fads and fancies come and go. And well acclaimed methods fall more or less quickly into well deserved oblivion. The writer remembers with some disgust and not a little amusement the use of Bier's hyperemia and of seeing in the hospital wards great swollen arms and legs—almost to bursting with cords to the body-side shutting off more and more of the pabulum of life. He never got his consent to employ (this kind of "beer" treatment) this method of treatment for cellulitis and other infections. Methods once discarded, sometimes come back and when better understood prove of real value. I was recently called upon to open a vein for the purpose of letting out two or three pints of blood, in a nephritic who was eclamptic and in extreme

coma. I had not the slightest idea that he could live. He did, and is apparently enjoying better health than he has for several years. Bleeding was abandoned and tabooed many years ago.

When the writer took residence in Tennessee twenty-one years ago he was thrown with a group of individuals any one of whom would undertake to arrive at a diagnosis in almost any kind of a case. And they did it. They verified their diagnosis by the aspirator, by exploratory operation and by autopsy. A medical diagnosis was about as easy for the surgeon as for the internist and a surgical diagnosis was quite as aptly reached by the by the internist as by the surgeon. So that today, out of this group, we have some of the most finished internists and the surest and safest surgeons, comparing favorably with those of any City or State. These men use the newer and so-called refined methods, but they are by no means lost without them.

The graduate of today and recent years can't get to "first base," without a blood examination, a basal-metabolism, a test meal or barium meal or an x-ray picture and these must be made by other men and likewise interpreted by other men.

What is needed today as much as it was in former days, is the medical man, whether internist or surgeon or specialist who can make up his own case. Having drawn from the patient a careful anamnesis let him weigh the findings as evidence and reach as expeditiously as may be and in consonance with his knowledge and experience determine what the matter is. Like a good lawyer, who, takes a practical but comprehensive brief and comes promptly to the lawsuit in the case.

The type of man to be aimed at, is the man that can take and interpret nervous reflexes for himself; that can use his own laryngoscopic mirror; that is familiar with and can take the eye grounds with his pocket ophthalmoscope; that can bear a chest and interpret all that *inspection* reveals and then take the index and middle fingers of the two hands and by *percussion* play a veritable tune, bringing out notes which convey as much meaning as the tones of the instrument of music. The man who does not require the assistance of the specialist save only in rare and obscure cases,

and will not be misled by the specialist, who so often is only half baked. When such a state of proficiency is attained, then the man of such attainments may aspire to be a specialist.

The Council on Medical Education and Hospitals has voted for such recognition of the college curriculum as to promote better clinical teaching and to supply that which appears to be lacking. Also for the "elimination from undergraduate study all courses in the specialties, leaving these to the graduate schools where they ought to be."

There has been some very pertinent discussion in recent years as to the tendency to abridge and infringe the privileges and prerogatives of the doctor, by certain statutory limitations and enactments.

There is a disposition on the part of some, and probably not without some justification, to criticize those in authority in the American Medical Association who appear to have given aid and comfort to the enemy or who at least are convicted of doing nothing—masterly inaction.

Pleading to the charges, the Board of Trustees and Judicial Council of the American Medical Association in a joint meeting make reply and admit about all of the charges, but they prefer to call the charges postulates. They admit that the postulates are pretty good postulates, if they had only been sponsored by some persons else; or if a little discrimination had been exercised as to whom it was intended to criticize. And then it would not have been so bad if they had not been so dam rough about it. The Board of Trustees and Judicial Council further plead that persons having complaints to prefer against the alleged leaders of the American Medical Association, such complaints should by all means be "well thought out," in fact the idea is gathered that there should be no complaints at all, but just "suggestions."

To the person possessed of average intellect and who is in the habit of balancing words of truth, it would appear that the "Medical Advisory Committee" complained of and whom the Board of Trustees and Judicial Council are at much pains to refute, have "thought out" pretty "well." The pungency of their "thought" at any rate seems to

have been born of such quality as to carry on a bee-line to its mark.

So that whatever the alleged short-comings and derelictions attributable to the so-called leaders of the American Medical Association, we now have those same so-called leaders putting themselves on record in words like these: "I think that I express the opinion of the medical profession in the statement that this Association as a representative of organized medicine, will oppose any medical activity of the state which will separate the practitioner from his patient, or will in any way interfere with the relations which he enjoys with the family and with domiciliary visitation!"

"Speaking to the Board of Trustees, permit me to say that we are of one mind in the desire to promote and to further develop the Association for the benefit of its members. We are not satisfied to have it the largest medical association in the world, we want to make it the best medical association in the world, as evidenced by the benefits which it affords its members and the public by the character of its work."

The questions at issue are: Social Insurance—Workman's Compensation; so-called State Medicine and the Health Center—Community Center or County Unit. These questions are in a way of being solved. What shall be done to put the Tennessee State Medical Association into the movement in the biggest way?

Shall we put our house in order to the end that we may meet the American Medical Association and other State Associations on common ground and work for:

(1) A restoration of the primitive privileges and prerogatives of the doctor of medicine.

(2) A better understanding that he be no longer dominated by party and clique, co-operation and quasi-public-service institution.

(3) Agreements that will secure to the medical practitioner for corporation and institutional employees per patient a fee commensurate with the fee charged the individual private patient.

(4) A doctor should not perform service for a corporation or institution whose Constitution and By-Laws propose and countenance practices which may be unethical.

(5) Conditions that will secure to the rank and file of the medical profession clinical advantages and privileges in public hospitals, now usurped by medical schools and universities.

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(6) The repeal or amendment of the present Workmen's Compensation Act so as to confer upon the injured person a service rather than a positive hardship and to provide adequate remuneration for medical attention.

(7) Sufficient amendments to the Medical Practice Act as will control the chiropractic and other cults.

Let the House of Delegates inform itself in all these matters and elect and instruct delegates to the American Medical Association who will be acquainted with the problems that now urge for solution.

The Constitution and By-Laws should be amended and brought up to date in order that the Association may be a live and going institution. There is a great mission for the Tennessee Medical Association if its members have a will and are endowed with authority to work.

OFFICIAL MINUTES OF THE EIGHTY-NINTH ANNUAL MEETING, HELD AT MEMPHIS, APRIL 11, 12, 13, 1922.

TUESDAY, APRIL 11.

The morning and afternoon were devoted to surgical and medical clinics given at the General Hospital and Baptist Hospital in Memphis, as follows:

SURGICAL CLINICS, 8-12 O'CLOCK.

Surgeons. Case.

R. L. Sanders—Lipoma.

R. E. Semmes—Traumatic Epilepsy-Craniotomy.

E. M. Holder—Appendicitis.

Jos. E. Johnson—Bell's Palsy-Muscle Transplant.

John M. Maury—Chronic Salpingitis and Tumor of Left Appendix; Chronic Salpingitis and Retroversion Uteri.

Percy Toombs—A Potter Version.

Alphonse Meyer—(1) Osteomyelitis of Tibia;
(2) Exhibition of Case of Infantile Paralysis—End Result.

1 P. M. Luneh at Baptist Hospital.

3 P. M. General Medical Clinic (General Hospital.)

Physician. Case.

Frank Jones—(1) Aortitis, Syphilitic; Chronic valvular Disease; Aortic Regurgitation; Myocardial Insufficiency; (2) Syphilis; Pulmonary Syphilis; Aneurysm of Arch; Aortic Regurgitation; Pericarditis with Effusion; Serofibrinous Pleurisy.

Doctors.

Otis S. Warr—Labor Pneumonia.

Louis LeRoy—Elephantiasis.

Henry Rudner—Aneurysm of Arch of Aorta.

2 P. M. Dermatological and Neurological Clinic.

Mareus Haase.—(1)-(2) Blastomyeosis, Systemic and Local.

C. H. Marshall.—(3) Pemphigus (after vaccination).

Robt. G. Henderson—(4) A Rare Yeast Infection. (5) Fibroid Tumors in a Syphilitic. (6) Basal Cell Epithelioma.

NEURALGIC CLINIC.

Wm. G. Somerville—(1) Tabes.

R. C. Bunting—(2) Paresis.

B. F. Turner—(3) Cerebrospinal Syphilis.

(4) Hypertrophic Cervical Pachymeningitis and Meningeo-Myelitis.

Carroll Turner—(5) Progressive Muscular Atrophy.

2 P. M.—PEDIATRIC CLINIC.

MEMPHIS GENERAL HOSPITAL— PATHOLOGICAL INSTITUTE.

Physician. Case.

Arthur Quinn—Hypothyroidism.

Gilbert Levy—Rat Bite Fever.

F. T. Mitchell—Empyema.

A. G. Jacobs—Diphtheria with Gangrene of Both Legs as a Complication.

W. R. Blue—Tracheo-Bronchial Lymphadenitis.

E. D. Mitchell—The Use of Rosenau's Serum in Three Cases of Infantile Paralysis.

W. L. Rucks—The Mental Deficient.

Eugene Rosamonde—A Heart Case.

Joel J. Hobson—A Case of Convulsions, the Cause To Be Determined.

W. R. Graves—Hemiplegia with Lues and Rickets, Cretinism, Case Presentation, Result of Intraperitoneal Injection, Case Presentation.

General discussion of any of the cases that are presented, and any other subjects that come up during the course of the meeting.

SURGICAL CLINICS—BAPTIST MEMO- RIAL HOSPITAL 8-12 O'CLOCK.

Physician. Case.

Eugene J. Johnson—Prostatectomy, Second Stage.

John L. Jelks—Rectal Fistula, Tubercular.

Wm. T. Black—(1) Amputation of Cervix and Laparotomy. (2) Carcinoma Cervicis Uteri—Radium.

Frank L. Smythe—(1) Chronic Appendicitis. (2) Cholecystitis, Chronic and Appendicitis.

Willis C. Campbell—(1) Albee Bone Graft for Tuberculous Spine. (2) Demonstrations of Results in Some Orthopedic Cases.

Edwin J. Lipsecomb—Osteomyelitis.

Battle Malone—Ventral Hernia.

O. S. McCown—Entero-Vesical Fistula Congenital, Exhibition Post-operative.

Max Goltman—Exploratory Laparotomy.

Henry Hill—Albee Bone Graft.

1 P. M.—LUNCH AT BAPTIST HOSPITAL.

Physician. Case.

Dr. Bryee W. Fountaine—Report of Some Interesting Gastro-intestinal Cases with Report of X-ray Findings by Means of Lantern Slides.

SURGICAL CLINICS—METHODIST HOS- PITAL—9-12 O'CLOCK.

Surgeons. Case.

Max Henning—Secondary Operation for Cancer of Breast.

J. A. Crisler—Cholelithiasis, Common Duct Stone.

CLINICAL PATHOLOGICAL CONFERENCE. CHISCA HOTEL, 8:00 P. M.

Case.—Alcholoric Icterus.

Presentation of Clinical Phases—J. B. McElroy, M. D.

Presentation of Pathological Findings, Gross.—J. A. McIntosh, M. D.

Presentation of Pathological Findings, Microscopic—H. C. Schmeisser, M. D.

General Discussion.

WEDNESDAY, APRIL 12—FIRST DAY.
MORNING SESSION.

The Association met in the Assembly Hall of the Chisca Hotel, and was called to order by the President, Dr. William Britt Burns, Memphis.

Prayer was offered by the Rev. Walter M. White, of Memphis.

Dr. Charles N. Cowden, Nashville, took the chair, and President Burns delivered his address.

Dr. Charles N. Cowden, Nashville, read a paper entitled "What Shall We Do With Our Case of Fibroid Tumors?" which was discussed by Drs. Smythe, Newell, Hodge, Burch, King, McCown, and discussion closed by the essayist.

Dr. J. P. Baird, Dyersburg, read a paper entitled, "Osteomyelitis."

This paper was discussed by Drs. Billington, Ingram, Roberts, and in closing, by the essayist.

Dr. H. M. Tigert, Nashville, read a paper entitled "Report of Two Unusual Cases." (No discussion).

On motion of Dr. Cowden, the Association adjourned until 2 P. M.

FIRST DAY—AFTERNOON SESSION.

The Association reconvened at 2 P. M., and was called to order by the President.

Dr. Isaac A. Abt, Chicago, Illinois, delivered a special address entitled "Medical Encyclopedias and Encyclopedists; A Historical Review."

Dr. Scale Harris, Birmingham, Alabama, followed with a special address entitled "Gastroptosis."

Dr. Oliver W. Hill, Knoxville, read a paper entitled "The Diet of the Child from Nine to Twenty-four Months."

Dr. Owen H. Wilson, Nashville, read a paper on "Standardization of Infant Feeding."

These two papers were discussed together by Drs. Rosamond, Hobson, and in closing, by the authors of the papers.

Dr. Eugene Rosamond, Memphis, read a paper entitled "Diagnosis and Management of Pyloric Stenosis in Infancy."

This paper was discussed by Drs. Wilson, Hill, Smythe, and in closing, by the essayist.

On motion, the Association adjourned until 8 P. M.

FIRST DAY—EVENING SESSION.

The Association met at 8:30 P. M., following a dinner given by the local members of the profession, and was called to order by the President.

Dr. Hilliard Wood, Nashville, read a paper entitled "Endoscopy," which was discussed by Dr. Simpson.

Dr. E. C. Ellett, Memphis, read a paper entitled "Extraorbital Tumors," which was illustrated by slides.

The paper was discussed by Dr. Schmeisser, and in closing by the essayist.

Dr. H. L. Fancher, Chattanooga, read a paper entitled, "Abdominal Pregnancy at Term," which was discussed by Drs. Maury, Ayres, Pride, Carter, Payne, McGehee, Jones, Lawrence, Yarbrough, and in closing, by the essayist.

On motion, the Association adjourned until 9:30 A. M., Thursday.

THURSDAY, APRIL 13—SECOND DAY.
MORNING SESSION.

The Association met at 9:30 A. M., and was called to order by the President.

Dr. C. P. Fox, Sr., Greeneville, read a paper entitled "Cancer of the Breast," which was discussed by Drs. Roberts, Cowden, Smythe, Sumpter, Holder, and in closing, by the essayist.

The Secretary, Dr. Olin West, reported the election of officers by the House of Delegates. (For particulars, see Minutes of the House of Delegates).

President Burns appointed Drs. Gallagher and McGehee to escort the newly elected president, Dr. H. M. Tigert, Nashville, to the platform.

Dr. Tigert, in accepting the presidency, said:

"Mr. Retiring President, Fellow-Members of the Tennessee State Medical Association:

"When I reflect as calmly and dispassionately and judiciously as I can under the circumstances on the elevation which you have seen fit to confer upon me, I am forced absolutely to the conclusion, in all honesty and fairness, to attribute it to your generosity rather than to my worth. I am, of course, not unmindful of the fact that there are numerous individuals who are far more worthy of this honor than I am. I want to say to you, gentlemen, that while there may be men who are more capable of service, none will serve with any greater love and affection.

"I naturally look back to the list of distinguished men who have occupied this office, and I recall numerous members of this great profession who have occupied this position before me. The fact that some men rattle in other men's shoes is not sufficiently strong to characterize my position as I find it. I feel like a puss in boots. I am not unmindful of the fact that my predecessor is not the least of these. Fortunately for me, gentlemen, early in my career, when I was yet an embryonic medical student, shortly emerged as a fledgling medico, I received an immunizing dose against arrogance and egotism that served me all the days of my professional life. In the days of old, I endeavored to interpolate a few remarks based on my own experience in the presence of my chief, and never will forget when one of the veterans of many wars, gory with blood, came to quiz. He came exactly in front of me and raised himself on his toes, looked over his spees as though looking for a pin on the floor. He raised himself on his heels with emphasis that made reverberations. I had a sense of an impending calamity. I knew something was going to happen. He said, "My dear little son, don't you know that your professional umbilicus has not yet been cicatrized?" (Laughter). Gentlemen, I have a gone feeling, and doubt if I ever had an umbilicus. I have endeavored to remember that lesson.

"Gentlemen, we are going to labor under a considerable disadvantage in the work we are undertaking for the ensuing year, inas-

much as we are losing one of the most efficient officers this organization has ever had. Dr. Olin West is about to depart, but not permanently. He will visit us from time to time. But I know of no man who has ever served more efficiently in office than he. I feel that the medical profession, not only as represented by this organization, which embraces practically the entire state, but the entire state sustains a great loss in his departure.

"If I may be pardoned for making a personal reference, I will say that I have been a member of this organization for twenty years. I have been brought into intimate contact with a great many of these gentlemen, many of them in the school room. I am sure it is unnecessary for me to say to the members of organized medicine, that I love my professional brethren and profession above all other vocations in life, and every man can understand that to be elevated by you, my professional confreres, to the position which you have seen fit to confer upon me is an honor which I esteem above all other honors.

"I want to bespeak your cooperation to the end that we may have as fine work in the year to come as in the years that have passed. I thank you." (Applause).

Dr. Deering J. Roberts, Nashville, moved that the members give a vote of commendation to the Nominating Committee for their excellent work. He said he has known for years at least three-fourths of the nominees that have been elected officers, and they got a hard job before them from the President to the Secretary in succeeding such officers as they do.

The motion was put to a vote and carried unanimously.

Dr. West asked the privilege of saying a few words. He said: "I feel that we have selected through our House of Delegates, the election being confirmed by this body, a set of very splendid men, and I do not know of any group into whose hands the affairs of the Association can be entrusted who, I believe, will strive any more earnestly and intelligently for the rightful administration and prosecution of these affairs.

It has been my pleasure and my privilege to know our newly-elected President since early life. I have been closely associated with him.

I do not believe there is a man in the State of Tennessee that has rendered more valuable service than Dr. Tigert.

"I know something of the trials and tribulations that any officer of an association or any man in a public position of any kind has to go through. I want to bespeak as earnestly as I can the active, not passive, help of every member of this Association for these incoming officers. I want to warn you that right now they will have some experiences, more or less unpleasant. One thing will be they will have their names in the newspapers time after time. They will be quoted as saying things they never thought of in their lives. They will be in the newspapers on all sorts of occasions. I will tell you right now, that a man in a semi-public or public position is not responsible for the appearance of his name in the newspapers.

"I want to have the privilege of conducting my successor, a friend of many years' standing, to the platform, and of presenting him to the Association, Dr. Larkin Smith. I believe he will make you a very efficient Secretary. When I cast the vote of the House of Delegates for his election, I said 'It gives me exceeding great pleasure to cast the vote of the House of Delegates unanimously for Dr. Larkin Smith, and may God have mercy on his soul.' " (Laughter).

Dr. Smith, in accepting the Secretaryship and Editorship of the Journal, said:

"Gentlemen: I thank you most sincerely for this honor. It is the first of its kind I have ever received in my life. I deeply appreciate it. It is with great gratification and appreciation, modified by a sincere and honest humility, when I realize whom I have to follow—a man who has done more for the Tennessee State Medical Association as a whole and for many of us individually. There is no better man in the world than Dr. West. I again thank you for the great honor you have conferred upon me." (Applause).

Dr. J. F. Gallagher presented preambles and resolutions in regard to Dr. West, which appear in the Minutes of the proceedings of the House of Delegates.

These resolutions were adopted by the Association unanimously by a rising vote.

Dr. H. L. Fancher, Chattanooga, Vice-Pres-

ident from East Tennessee, was introduced and said: "So far as I am concerned, President Tigert will have all the assistance and co-operation I can give him as Vice-President."

The retiring President, Dr. Burns, said: "I want to thank you for the courtesy you have shown me in your attendance during these occasions, and for the work that has been carried on during the year. I desire to call your attention to the fact that the committees of this Association are not functioning in many instances. Our chairmen have had trouble in getting any kind of communication from members of the committees. This ought not to be, and I hope you will assist the officers for the ensuing year, that all the committees will do active work, and their members pay some attention to the work initiated by the various chairmen of these committees. I call your attention to the fact that not a single vice-president of the Association has been present at this meeting. At least, the officers of the Association ought to attend these meetings.

Dr. Frank D. Smythe moved that the thanks of the Association be extended to the retiring President for the efficient manner in which he had presided over the deliberations of the Association and for what he has done since his promotion to the honorable position of President of this Association. I have been associated with Dr. Burns in college work and on committees, and have cooperated with him in our local society work, and I hardly see how he has had the time to attend to his business and work as he has done in the interest of organized medicine. I think it is in keeping with the desire of this Association that a rising vote of thanks be extended to him for his efficiency and great effort in the interest of the Association.

Motion seconded and unanimously carried.

Dr. W. M. McCabe, Nashville, read a paper entitled "Present Status of Pyloroplasty," which was discussed by Dr. Dixon, and in closing, by the essayist.

Dr. Robert Caldwell, Nashville, read a paper entitled "Acute Mechanical Intestinal Obstruction."

Dr. L. L. Shedd, Knoxville, followed with a paper on "Treatment of Intestinal Obstruction."

These two papers were discussed together by Drs. Holder, McCabe, Shoulders, Fancher, after which the discussion was closed by the authors of the papers.

On motion, the Association adjourned until 2 P. M.

SECOND DAY—AFTERNOON SESSION.

The Association reconvened at 2 P. M., and was called to order by President Tigert.

Dr. W. M. McCabe moved that the thanks of the Tennessee State Medical Association be extended to the medical profession of Memphis, and also that a vote of thanks be given to the management of Hotel Chisea for the many kindnesses and courtesies extended during this meeting.

Seconded by Dr. Newell and unanimously carried.

The President ruled unless there was objection, that all papers called for and not read shall be considered as read by title for the purpose of enabling the Association to publish the papers in the Journal of the Tennessee State Medical Association.

As no objection was raised, it was so ruled.

Dr. J. C. Ayres, Memphis, read a paper entitled "Our Duty and Responsibility in the Face of the Abortion Evil," which was discussed by Drs. Sanford, Fancher, Hopper, Roberts, Crisler, Haase, and in closing, by the essayist.

Dr. Deering J. Roberts, Nashville, moved that the President appoint a committee composed of three members from each grand division of the state to make a report at the next meeting of the Tennessee State Medical Association on the abortion evil.

The motion was seconded by Dr. Crisler, and after discussion, it was put to a vote and declared lost.

Dr. John E. Hall and Dr. J. Henry Litterer, Nashville, read a joint paper entitled "Re-

sults Following Belfield's Operation in 101 Cases of Seminal Vesiculitis."

This paper was discussed by Dr. Spingarn, and in closing, by Dr. Hall.

Dr. W. D. Sumpter, Nashville, read a paper entitled "Hemataeoipos Complicated with Ovarian Cyst and Appendicitis," which was discussed by Drs. Fancher, Yarbrough, Black, and in closing, by the essayist.

Dr. J. A. Crisler, Memphis, read a paper entitled "Diagnosis of Extrauterine Pregnancy," which was discussed by Dr. Shoulders, and in closing, by the essayist.

Dr. Marcus Haase, Memphis, read a paper on "Early Diagnosis of Syphilis," which was discussed by Drs. Turner, Hopper, Schmeisser, and Marshall.

Dr. B. T. Terry, Nashville, read a paper entitled "The Great Value of Autopsies," which was discussed by Drs. Tigert, Schmeisser, Burns, and discussion closed by the essayist.

The following papers were read by title and ordered published in the proceedings:

1. "Suprapubic Prostatectomy, with Special Reference to Spinal Anesthesia," by Dr. W. F. Fessey, Nashville.

2. "The Treatment of Gonorrhea in Women," by Dr. L. G. Duncan, Memphis.

3. "Further Studies in the Use of Radium in Cancer of the Uterus," by Dr. William Sailer Anderson, Memphis.

4. "Birth Injuries of the Head From A Pediatric Standpoint," by Dr. T. F. Mitchell, Memphis.

5. "Treatment of Compound Fractures of the Tibia, With Reports of Three Cases," by Dr. W. F. Clary, Memphis.

6. "Incidence of Tabes Dorsalis," by Dr. Carroll C. Turner, Memphis.

7. "The Treatment of Old Fractures and Dislocations of the Elbow," by Dr. Willis C. Campbell, Memphis.

8. "Acute Cholecystitis in Childhood," by Dr. R. L. Sanders, Memphis.

On motion of Dr. William Britt Burns, the Association adjourned sine die.

FIRST MEETING OF THE HOUSE OF DELEGATES OF THE TENNESSEE STATE MEDICAL ASSOCIATION AT THE EIGHTY-NINTH ANNUAL MEETING HELD AT THE HOTEL CHISCA, MEMPHIS, TENNESSEE, APRIL 11, 1922.

DR. A. F. RICHARDS, Speaker of the House, Presiding.

DR. OLIN WEST, Secretary.

The Chairman: The House of Delegates will please come to order, and we will proceed with the business, after first having the Secretary call the roll, and those who are here, as he calls your names, will please answer to the roll call; and if there are any here who are Delegates to the society and whose names do not appear you can make it known, and your name will be disposed of according to the rules of the House of Delegates. The Secretary will please call the roll.

The Secretary: I will call the list of delegates as I have them.

The following delegates were present:

County	Delegates.
Putnam -----	Dr. Z. L. Shipley
Madison -----	Dr. S. M. Herron
	Dr. J. L. Crook, Dr. Herman Hawkins.
Maury -----	Dr. M. A. Beasley
Obion -----	Dr. Ira Park
Davidson -----	Dr. Robert Caldwell
	Dr. A. G. Nichol, Dr. W. G. Kennon,
	Dr. W. M. McCabe, Dr. R. E. Fort,
	Dr. C. N. Cowden, Dr. J. A. Wither-
	spoon, Dr. W. C. Dixon.
Knox -----	Dr. Oliver W. Hill
	Dr. R. E. Lee Smith, Dr. W. P. Wood.
	Dr. L. L. Sheddan.
Lauderdale -----	Dr. J. W. Sanford
Tipton -----	Dr. L. A. Yaraborough
	Dr. H. W. Gale, Dr. G. B. Gillespie.
Shelby -----	Dr. J. L. McGehee
	Dr. H. B. Everett, Dr. F. D. Smythe,
Hamilton -----	Dr. T. E. Abernathy
	Dr. Dunbar Newell.
Roane -----	Dr. W. E. Gallion
Giles -----	Dr. C. A. Abernathy
White -----	Dr. J. A. Breeding
Greene -----	Dr. C. P. Fox
Carroll -----	Dr. E. W. Hillsman

Shelby ----- Dr. A. B. DeLoach
Dr. J. L. Andrews, Dr. W. L. Williamson.

Bedford ----- Dr. J. P. Taylor
Lineoln ----- Dr. J. A. Patrick
Dyer ----- Dr. J. P. Baird
Gibson ----- Dr. C. B. A. Turner
Williamson ----- Dr. K. S. Howlett

The Secretary: Those are all the names I have, Mr. Chairman. There are gentlemen present from other counties.

Voices: I see Dr. Taylor here from Rutherford County.

The Secretary: Under the Constitution Dr. Taylor must be appointed.

The Chairman: No other member from that county here?

Voices: No other member.

The Chairman: I will appoint him as a representative.

The Secretary: Dr. C. A. Abernathy from Giles. Are you the appointed delegate?

Dr. C. A. Abernathy: I am the delegate.

The Secretary: I have no information about it, doctor. If there are alternate delegates we would like to get the names. Dr. A. G. Nichol is alternate from Davidson County. Dr. Jesse Hill is alternate for Dr. Barry of Knox County.

The Chairman: Well, gentlemen, the count of the roll call shows the majority of the delegates present, and I declare the session open for business. The next item on the program is reading the minutes of the last meeting.

The Secretary: Mr. Chairman, the minutes of the last meeting, of course, as you know, are rather long and were published in the Journal for May and for June, 1921, and unless—

A Delegate (Interrupting): Mr. Speaker, I move that the minutes as written in the Journal be accepted as correct without being read.

A. Delegate: I second the motion.

The Chairman: It has been moved and seconded that the reading of the minutes be dispensed with and accepted as published in the Journal.

(The motion was carried.)

The next item of business as laid out by the constitution is the selecting of a nominating Committee. Now, gentlemen, this is done by each section of Tennessee; West Tennessee, Middle Tennessee, and East Tennessee; getting together among themselves advising and naming three men from each section which will make nine men for the state, and these nine men will confer between now and our next meeting, which will be on Thursday morning at 8:30 o'clock, at which time the report will be made and the election of officers will be had. In selecting the members of this nominating committee, they must be selected only one from a county. You can not select two or three delegates from the same county, but one from any certain county without exception. I will declare the society adjourned for five minutes for the sections to get together and name your nominating committee, and we will reconvene in about five minutes.

(Five minute recess.)

The Secretary: Mr. Chairman, the selections of the names on the nominating committee from the various divisions of the state results in the selection of: Drs. Robert Caldwell, J. P. Taylor, C. A. Abernathy from Middle Tennessee, R. E. L. Smith, J. E. Abernathy, W. E. Gallion from East Tennessee, H. B. Everett, J. P. Baird, J. W. Sanford from West Tennessee.

Mr. Chairman, there are several other delegates that have come in and I wish they would give their names so the official stenographer can record them present.

The Chairman: Those delegates who have come in will please announce their names.

The following names were then announced:

Dr. A. B. DeLoach of Shelby County, Dr. J. B. White of Marshall County, Dr. T. A. Patrick of Lincoln County, and Dr. J. E. Powers of Henderson County.

The Chairman: Gentlemen, the instructions to this committee are that you deliberate from now until our final meeting on Thursday morning, at which time you will make your report which will be acted upon at that time. It is hoped you will meet together and select those who will further the best interests of the society, and in your deliberations it is hoped you will lay down your politics, and

lay down your self-interests, lay down your sectional feeling and work alone to serve the best interest of the medical profession and the Tennessee State Medical Association, and that you will bring such names before us as will bring about the best results in your judgment. These deliberations which you will hold are to be kept to yourselves and not made known until the morning of your report.

The next item on the program is the report of the Secretary, and we will now hear the report of the Secretary.

(The Secretary's report was printed in the April Journal.)

During the report of the Secretary the following delegates came into the meeting:

Dr. J. R. Bone of Lebanon, Wilson County.

The Secretary: Mr. Chairman, I have here all the records of the Society, which of course are ready for submission to you and the House of Delegates in any sort of inquiry you may wish to make about them. The books are all here, including the membership book and all.

The Chairman: Gentlemen, you have heard this excellent and elaborate report from our very worthy Secretary, who has decided to retire from the service at this meeting, and I want to say that in your disposing of this report I would like for you to mention especially this report so that it may be published as a whole and go into the history of the Tennessee medical profession and preserved for the Centennial year celebration to which it refers. The matter is before you, gentlemen. Shall I hear a motion?

A delegate: I make a motion to preserve it in the records.

Dr. F. D. Smythe: Mr. Chairman, I move the report be received and filed, and that it be preserved, and if possible that this report should be published and put in the hands of the members of the profession about eleven years hence. I think it will stimulate us and make our celebration a great success.

The Chairman: And you would include that it be printed in the Journal?

A Delegate: Mr. Chairman, I most heartily second the motion.

The Chairman: Gentlemen, it is moved and seconded that this report of our Secretary be accepted as read and published and also pre-

served for use on our Centennial celebration.

The motion was carried.

The Treasurer's report comes next in order of business. Gentlemen, we will now hear the report of the Treasurer.

The Secretary: Mr. Chairman, and gentlemen, I have the report of the Treasurer, Dr. Gallagher, which includes every item of every sort that should be included in the Treasurer's report. It includes the statement of the membership dues, receipts, and disbursements. This report is of course too long to read, but the summary of the report shows:

(The Treasurer's report was printed in the April Journal.)

Dr. F. D. Smythe: Mr. Chairman, I move that the report be referred to an auditing committee.

A Delegate: I second the motion.

The Chairman: It is moved and seconded, gentlemen, that the report be referred to an auditing committee for checking.

The motion was carried.

We will appoint Dr. Smythe of Memphis, Dr. Lee from East Tennessee—Dr. Smythe being from West Tennessee, and Dr. Robt. Caldwell from Middle Tennessee.

The next item on the order of business is the report of committees. The committees will be called, and I trust that the Chairmen are prepared to make reports at once and that we will move along in this matter. The first committee on the list is the committee on Public Policy and Legislation. Dr. Tigert is the Chairman, and we will be glad to hear from him.

No response from Dr. Tigert.

He doesn't report. The next committee is on Scientific Work.

The Secretary: Mr. Chairman, the Committee on Scientific Work presents the program as it is published for its report. We have introduced an innovation this year and have tried to vary the monotony that has heretofore marked our meetings. We have introduced the feature of clinics and those of you who have attended the clinics today at the Memphis General and Baptist Memorial Hospitals have seen what has been accomplished by the committee in charge of this feature. To my mind it has done very excellent work. The scientific program represents a

great deal of work in itself. It is a very difficult thing to secure a program and it is much more difficult to get the thing stopped after it has gotten a good start. Some of these papers were not submitted until just before the program went to press. All we could do was to add them to the program to get them printed at all. I have no other report to make, Mr. Chairman, other than to offer the official program of the committee.

The Chairman: Gentlemen, you have heard the report of the Chairman of the Committee on Scientific Work. What disposition do you want to make of it?

A motion to adopt the report was carried.

The Chairman: The Committee on Memoirs. Dr. I. A. McSwain, the Chairman is not present.

The Chairman: Has there been any report formulated? Is there any member of that committee present that knows anything of what it has done? I would like to insist that this committee on memoirs, especially if there is any member of it here at all, state about the work it has done, and for the members to get together and make a report. This is one thing that ought to be done officially and ordered printed in the Journal, and I want to insist if any of that committee is present that they just assume the responsibility of it and try to get a committee report.

The Committee on Medical Defense, Dr. S. R. Miller, Chairman will now report.

The Secretary: Mr. Chairman, it is a matter for regret to have to announce that Dr. Miller, for the first time within my recollection, is absent from this meeting on account of the illness of Mrs. Miller. He had written that his report had been sent, but up to date I haven't received it.

Dr. C. P. Fox: Mr. Secretary, the report was handed to you this morning.

The Secretary: Well, I beg your pardon. I thought it was the report of the Councillor. Yes, Mr. Chairman, the report is here.

(This report appeared in the Journal for April.)

Dr. F. D. Smythe: I would like to ask, Mr. Secretary, the percentage of doctors who take the insurance.

The Secretary: We had 1556 members enrolled last year and 1195 members paid medi-

cal defense. In 1920 we had something over 1600 members enrolled and 1300 paid medical defense. Up to this time this year we have something over 1100 enrolled and 947 of them have paid medical defense. The report of the Treasurer of that committee is not attached to this because Dr. Crook has not yet added it, and I suppose it will be presented as soon as he comes in.

Mr. Chairman, I would like to say inasmuch as Dr. Miller is not here, that his work as Chairman of this committee has been enormous in amount; and it has been handled in a very intelligent, unselfish way. It has necessitated arduous labor upon the part of Dr. Miller, who has to my knowledge taken a great deal of pride in the work and has looked after every detail which should come before the committee. I would like to move that this report be accepted, that the committee be thanked for its work, and that this committee be continued.

Voice: Second the motion.

The Chairman: Gentlemen, you have just heard the Secretary and the motion he made.

The motion was carried.

The Chairman: The next committee is the Committee on the Conservation of Vision. Dr. Ellett is Chairman.

The Secretary: Mr. Speaker and gentlemen of the House, the Committee on Conservation of Vision made a report last year embodying certain recommendations and a new committee was appointed. The report is here on the desk.

(This report appeared in the Journal for April.)

The Chairman: Gentlemen, you have heard the reading of the report of the Committee on the Conservation of Vision.

Voice: I move it be adopted and the committee be discharged.

The Chairman: Does the motion meet with a second?

Voice: Second the motion.

The motion was carried.

The Chairman: The next committee is the Committee on Public Health and Public Instruction; Dr. Crockett being Chairman. Dr.

Crockett is not present. The Committee not being present we pass to the next.

The Committee on Cancer. Dr. Haggard is Chairman. Dr. Haggard not present. No report.

The next is the Committee on Education. Dr. McElroy of Memphis. Is he present? We pass that one. The next is the Committee on Social Insurance, Dr. Everett, Chairman.

Dr. Everett: Mr Chairman, we request that this report go over until tomorrow morning inasmuch as all of the committee are in other parts of the meeting. While we have been working on it we haven't it ready now, it will be ready in the morning if you can extend us the additional time.

The Chairman: Without motion this report will be deferred until the morning of tomorrow's session. The next Committee is the Committee on Hospitals. Dr. Frank Smythe, of Memphis, is Chairman.

Dr. Smythe: Gentlemen, I wish to say I have made an effort to get in touch with all the members of the Committee, but I have not had very enthusiastic co-operation from any of them except those from Chattanooga. Some of the members said they would go over with me, and I will be prepared to submit a report of some kind at tomorrow's meeting. I wish to say, however, in this preliminary uncompleted report, that the state, county and city are negligent to some extent in the forms allowed in the practice of medicine,—I mean by that the free clinic and things of that kind furnished by them. People who are able to pay doctors should be treated by doctors, and I will ask that you permit me to meet some of the committee who are present at this time and I will take a few hours off and make my report up and present it to the House of Delegates at some time during the meeting of this Association. There is much to be done in this, a very important duty that has been thrust upon me by our President, and I think its importance justifies the taking of as much time as is necessary to place the facts concerning hospitals before the association in the place where they belong. I will ask you to indulge me, Mr. Chairman, to this extent. Dr. Newell has furnished me a complete list

of all the hospitals in his city, which is very creditable.

The Chairman: The next is the report of the delegates to the A. M. A. for last year, Dr. Yarbrough and Dr. Newell. I see Dr. Yarbrough present.

Dr. Yarbrough: Dr. Newell will make a report of this later.

The Chairman: He will make it tomorrow?

Dr. Yarbrough: Yes sir.

The Chairman: We will defer that.

The Secretary: Mr. Chairman, inasmuch as we have gotten along so rapidly with the business and are down to the reports that can not be presented until tomorrow, unless there is something to be brought up before us, I would suggest that we consider adjourning. I would like to ask a favor to the Chairman and the Secretary and to the official stenographer that those of you who may have business to present, either in connection with any new business or any report that may have been made in connection with any old business, that you have your proposition well formulated so that it can be presented as rapidly as possible and so that a distinct and definite record can be made of it. Before adjourning, however, I want to report that the Secretary has had put into his hands a matter affecting differences between the Giles County Medical Society and one of its members, and another matter affecting the Knox County Medical Society and one of its members. Now these matters are purely for consideration by the Councilors, and under the constitution of the Association must be reported to the House of Delegates and referred by the House of Delegates to the Board of Councilors without discussion. That is a specific provision of the constitution, and I hope therefore that somebody will introduce a motion to the effect that action be taken accordingly.

A Delegate: I move that these matters be referred to the Board of Councilors.

Voice: I second the motion.

The Chairman: It has been moved and seconded that these matters relative to differences between members and the Giles and the Knox County Medical Societies be referred to the Board of Councilors.

The motion was carried.

Anything else, gentlemen, to come before us before we adjourn. Just before a motion is made I want to say to you—to the Nominating Committee—that you have now a little more work than you have had heretofore in that you will have three men to nominate to the American Medical Association as Delegates, and it is a matter you want to consider very carefully. Look to the best ends for Tennessee and the A. M. A. and look to the best interests of the state as a whole. I just want to remind you of this and to call your attention to the importance of it. Two Trustees of the Journal are to be elected. I believe is the additional work that this committee has to do.

A Delegate: Mr. Chairman, let this third delegate come from the middle of the state. We now have one from the East and one from the West.

The Chairman: That has not been passed on by the House of Delegates, but it is reasonable, and really that should be made a rule by the House of Delegates.

A Delegate: I make a motion to elect the third Delegate from the middle division of the state.

The Chairman: You have heard the motion to the effect that the other delegate be elected from the middle section of Tennessee. I don't think I heard a second.

Voice: Second the motion.

The Chairman: Gentlemen, it is moved and seconded that the new Delegate representing us in the American Medical Association be elected from Middle Tennessee.

The motion was carried.

The Chairman: Is there anything further you want to mention. If not—

Voice: (Interrupting) The alternate also.

The Chairman: Yes, the alternate would naturally come from that section. The motion is in order to adjourn.

Upon motion adjournment was taken until 8:30 A. M., April 12, 1922.

APRIL 12, 8:30 A. M.

The Chairman: Let the House come to order, Gentlemen, We are a little late in beginning, the scientific session begins pretty soon, and we would like to crowd our work into a short space of time, that is as short a

space as possible so we may attend to it. If you have any business, let's put it through as rapidly as possible. The first thing will be the reading of the minutes of yesterday.

The Secretary: Mr. Chairman and gentlemen, these minutes are taken down so as to include everything that was said yesterday and it is all written out in full. Of course, it won't be necessary to read over all the conversation which took place, but I will try to read the minutes so as to show what happened.

The Chairman: Gentlemen, you have heard the reading of the minutes of yesterday's session. What disposition do you propose to make of it?

The Secretary: These minutes, gentlemen, are open. Anyone who cares to see them can do so. They are here on the desk.

By motion duly put and carried the minutes were approved.

The Chairman: Now we will take up where we left off yesterday. We will call for the committee's report on public policy and legislation, Dr. Tigert being the chairman. Is he present? (No answer). The next committee that failed to report is the Committee on Memoirs. Are any members of that committee present this morning? (No answer). The next committee is the Committee on Public Health and Public Instruction, Dr. Crockett. (No answer). The next committee is the Committee on Cancer, Dr. Haggard, Chairman. (No answer). The Committee on Education, Dr. McElroy. Is he present? (No answer). The Committee on Social Insurance. The report was presented by Dr. H. B. Everett. (It was printed in the April issue of the Journal).

The Chairman: Gentlemen, you have heard the report of the Committee on Social Insurance. What disposition do you propose to make of it? Let's hear from you at once and get the matter off hand. Shall we receive it?

Dr. McCabe: This workmen's compensation law, so far as the medical profession is concerned, is one of the most important things with which we have to deal. I don't believe the medical profession understands this question. Of course, that feature of the act with which we are interested especially is that which deals with the compensation of the phy-

sician and the hospital, and the nurses, and medical supplies. The act provides that \$100 shall cover everything. In other words, it shall cover the surgeon's fee, the hospital fee, it shall cover the amount for the purchase of medical supplies and so on. I have come in contact with this law, and I know from experience that if you don't have an agreement with the insurance companies before you take charge of the case, that they will not pay over \$100 for the treatment and hospitalization of these patients. For instance, I had a patient whom I sent to the City Hospital. My fee amounted to, I think, about \$160. I had a verbal agreement with the insurance company, and the fee of the City Hospital amounted to in the neighborhood of \$125. I sent my bill for \$160, the hospital sent their bill, and they promptly sent me a check for \$60 and sent the hospital a check for \$40, which made \$100. That was all they would pay, and refused to pay any more, although I had a verbal agreement with them. Not only that, but they have gotten to the point where they will send patients to a charity hospital and demand they be admitted as charity patients, and if the request is made for the payment of a bill, they refuse to pay it.

Therefore, I believe that this law is a thing that we should absolutely specialize on in the next legislature, and we should try to have this law amended in order that the doctors may receive their just dues. The way I feel about it is that I don't mind giving charity where it is necessary to give charity, but I don't feel that I should give charity to any insurance company when all of them, or practically all of them, are wealthy corporations, and don't allow a reasonable compensation for medical men. I think this should have the attention of the society as a whole, and should not be handled by the local organization at Nashville, but by the organization over the state. As a suggestion, I offer that the report of Dr. Everett be received and that when the time comes, to elect the members of the coming legislature, the doctors question them as to their attitude in this matter and elect those, or vote for those who are favorable to amendment of the present law.

The Chairman: Any other discussion, gentlemen?

Dr. E. D. Newell: It is the shame, the manner in which the fee of the doctors has been proportioned out by the insurance companies. It is the same thing that we have at Chattanooga. I have seen cases where the patient has been sent to the charity hospital. It is a serious fact that no matter how badly the corporation has injured the patient, they will not, unless you make a positive agreement beforehand, allow more than \$100 for the professional attention needed. It is upon us to protect ourselves and see that the next legislature makes some provision so the doctors can be paid for their work. These are not charity patients at all, and if a different arrangement was made, the insurance companies would just charge the corporation a higher rate of insurance, and that is all they have to do, to raise the insurance rate a little higher, and the corporation can stand that, and then the doctor can be adequately paid for his services. It is up to us to get this before the next legislature. I want to thank the doctor for his report. I think he has gotten the very essence of it and that a concerted action should be taken in Nashville at the coming session.

Dr. L. L. Sheddan: I want to say that our experience in Knoxville has been practically the same as that of Dr. Everett, Dr. McCabe, and Dr. Newell. The doctors have submitted to being the goat of everything so long that corporations and other similar organizations seem now to practically control the medical profession in all its branches and can dictate to them and set the terms upon which they shall work, I think the suggestion that we shall see if something can't be done at the coming legislature to remedy the situation as it now stands is indeed well made, but the question of getting any action or amendment through the legislature without a legislative fund is something that is practically impossible. If we go down to Nashville and try to get relief from this workmen's compensation law, we will have to fight corporations, insurance companies, and everything else on the other side will be there with a lobby fund, or a legislative fund, sufficient to overcome anything that we can do in our feeble way, unless we have some kind of a fund big enough to back the efforts of our

organization. I am heartily in accord with the recommendation by the Chairman of this Committee, and Dr. McCabe and Dr. Newell, that something should be done to try to relieve the situation as it now stands. We have discussed the matter in our Knox County Society a number of times, and have about come to the conclusion that the profession in Tennessee needs a fund to fight for anything they want. We have agreed in our city that if each member was taxed or assessed the sum of \$5.00, such a fund would be sufficient to make a fight before the legislature for anything that we may desire, and it would enable us to employ an able and representative attorney. You can't get these men without paying them for their services, and you can't get the ear of the legislature without the assistance of someone who knows all the ropes of the game and somebody that understands it. I agree with what has been said, and anything that can be done to help in this situation, I am ready to stand for. The idea is ridiculous to take these poor people who are brought in from the lumber camps and mining towns, after having been injured, for treatment, and in those cases, when the hospital bill will run far above \$100, and in such cases our compensation will be nil if the hospital gets what was justly due it. Fortunately, I have been able to get the company themselves to pay a reasonable fee, but very often I have had a good deal of trouble in getting them to do it. So my opinion of the matter is that it would be wise to adopt the suggestion as made, but I don't see how we can do anything in the matter unless we have a fund with which we can do whatever is necessary when we want to make ourselves heard in the passage of any legislation.

Dr. J. L. Crook: I think it is a very hopeful thing, and the one thing that strikes me most forcibly, and that is that it is the workmen themselves who are most prejudiced or harmed by this law. I haven't known of a single employee of any corporation that is in accord with the workmen's compensation law. In my judgment, there is going to be a tremendous pressure brought to bear by the laboring men of the state to get this law modified. The combined influence of the laboring men of the state is a lot more than the medi-

cal profession could exert. The best thing we can do is to support them in the matter. I think we should without doubt be heard at Nashville during the coming session, and we should refuse to be bound by any corporation fixing our fee not to exceed a certain amount. I personally haven't had any trouble in this regard except in one instance. I state to these corporations that "I want to do your practice, but I am not going to do it under this workmen's compensation law of the state, which says how much I shall charge. There is a law in force," I tell them, "which says that a fee not to exceed \$100 is to cover medical, hospital and all supplies necessary to treat the patient, and I refuse to work for you under that law. I will continue to do your work and be at your service if this \$100 fee is suspended. That is up to you. You can't have your employees in your factory and have them work for you contentedly unless they are satisfied that if they are injured they will be given proper medical attention, and you will have to waive the provisions of this law if I am called upon to serve any of your injured employees." That is the milk in the cocoanut. I don't care what the law is. The employee gets hurt. He is working for so and so. You are called upon to wait upon the injured, and if you inform the employer you won't call unless the provisions in regard to the \$100 fee is waived, he will tell you to go ahead. Whatever you get out of that insurance money you can pro rate it to the doctor and hospital bill if you care to. The only thing that the law specifies is that the insurance company cannot pay a fee in excess of \$100 for medical and hospital services, but that does not in any sense keep us from charging and collecting a fee in excess of that, and that is what we will do if you want our services. Without a doubt this law works a greater hardship on the employee than it does the physician. I have in mind a man with a double fracture of the knee and the ankle involving a fracture of the patella and femur above. He is disabled for life, and he can't get but \$12 for a short space of time, and that is all.

Voice: \$11.

Dr. Crook: (Continuing) \$11 then. And this man is now handicapped and will be dis-

abled through life, and before that he was perfectly sound. That is what we have to do, to deal with the sentiment of the working men, and insist upon that point, because if we go before the legislature and ask for some sort of discrimination in our favor we won't get it. You don't want to beg it from them in any manner at all. I think we would lose our self-respect to make a contract with the people that employ us on the basis that is now provided by the law, and no man on God's green earth can make us work for a company unless we want to. Let's look to the laboring man to fight it out.

Dr. J. F. Gallagher: I rise to endorse the suggestion that has been made. I don't know how much experience Dr. Crook has had with the Legislature, but had he lived in Nashville and been on legislative committees as others have had, he would understand the requirements in dealing with them, and he would know the amount of money required to be expended in dealing with them for any legislation. Therefore, I would suggest personally that we not do as Dr. Crook suggested, but that we raise a fund to provide for a committee of men to look after the interest of the medical profession to whatever end it might require. Insofar as the workmen's compensation act is concerned, I happen to know personally that the laboring men, and especially the organized labor of the state, are responsible for the present Workmen's Compensation Act. This act is not acceptable to them, but they considered at that time that a poor act was better than no act at all. I happen to know the man that drew the general bill under which we are operating. I happen to know also of the clause therein providing for the compensation of physicians and surgeons and hospitals. Now, there is just one opposition to this bill, and that came entirely from the Tennessee Manufacturer's Association. The insurance companies say "we don't care. We wouldn't oppose any amount we might have to pay you. We would simply adjust our rates and that is all we would have to do, and we would certainly not oppose it," but the Tennessee Manufacturers' Association would oppose it, and they have the money, and they have their organized lobby. So that the main point I would urge would be

for the House of Delegates to seriously consider a legislative committee to be appointed by the chairman, and to serve in this undertaking, and to formulate some plans for the interest that they will be protecting, and I believe that in that way we can best obtain the needed relief.

Dr. D. J. Roberts: I have no personal interest in this matter, being a back number, but I want to endorse most emphatically the stand that has been taken by Dr. McCabe. We have been made the goat too long. For three-quarters of a century I have seen the doctors of Tennessee do more charity work than any other citizens of the state, and I expect to see them continue that, but it is time for us to make demands along a certain direction. I want to see the Association go to work and stop the impositions that have been placed upon us year after year by the legislature. They say that brings up class legislation. There has never been so much class legislation before this time either in the Legislature of Tennessee or in the halls of the United States Congress as there probably is at the present time. There has been legislation after legislation for the organized lawyers, but that is not class legislation, there has been little legislation for the whole people, and it is a shame to allow matters to continue in this wise, which, to my knowledge, have existed for three-quarters of a century.

Dr. F. D. Smythe: I wish to relate a personal experience which I encountered, of very recent date. A construction company was erecting a building here, and a man fell through an elevator shaft four stories, which resulted in a serious accident to his head, broke his neck and several ribs, and his forearm had a compound fracture. It appeared at that time that the man was going to die right away, and the men were real anxious to have a real surgeon for the case. The company was also anxious for their own protection, and they sent word to the hospital by the ambulance driver to see to it that I was put in charge of that case. I happened to be operating at the time of the arrival of the ambulance, and saw the patient in a very short while. The man's condition was desperate, and I resorted to measures to overcome the shock. After that there were x-ray

pictures made, and then there was a complete observation and diagnosis of the case. He was accompanied to the hospital by the foreman of the company or gang to which he was a member. He stated in the presence of the nurse that they wanted me to give this man my personal attention, and to spare no expense for him, and to get him all the needed nurses. To make a long story short, I will state that I gave the man a great deal of attention and in the course of three or four or five weeks, he was able to leave the hospital, and he was sent to his home. He was under my care from August until January. I sent a bill to the company for \$600. The hospital bill was \$400. Probably the x-ray bill alone amounted to \$235. There were various pictures taken having to do with operations and compound fractures, and I received in reply to my bill from an insurance company a check for \$42, and the hospital I think received for their \$400 bill some \$26, or something like that, and about \$26 out of the \$100 went to the nurses. I stated in reply that I wasn't dealing with them under this compensation act, and I wasn't dealing with an insurance company; I was dealing with the president of the construction company. A Chicago concern was erecting the building here. They didn't reply to my letter at all, and they never did give me any satisfaction at all, except they stated they were protected by that law which said they were required to pay \$100 only for operation, treatment, hospital bill, and all. You understand, my agreement was with the foreman of the concern, and not with the insurance company. I didn't consider any labor compensation act. However, I am without my money with the exception of this money here which I have mentioned, and the nurses are without their money, the hospitals without theirs—with the exception of this \$100, when the bill was \$1100 or \$1200 altogether. I put this bill in the hands of an attorney here, who is now purposing to bring suit, and with instructions from me to take it to the Supreme Court of the State. I say this was done in spite of the agreement I had with the foreman of the company, and it is simply a means they have of getting out of paying just bills by dodging behind the law, which is not only a great injustice to the surgeon and

the hospital, but fundamentally it is a very great injustice to the workmen as we could better attend their injured men. If the condition continues on as it is going at this time in Memphis, the time will come that an injured man will be unable to get the service of a decent surgeon, and he will have to put himself into the hands of the idle doctor and accept from him such service as he can obtain. This is a gross injustice to the laboring man, but the laboring men do not seem to be able to appreciate that angle of the law. So far as we are concerned as medical men, I don't think we need to look to the Legislature for much assistance. We must appreciate the fact that our destiny is in our own hands, and so long as men can order you about and demand your service without compensation, just that long will they continue to do so. There remains but little for us to do except take the positive stand and decline to give real service under such circumstances without a thorough understanding as to who is going to be responsible for this bill. The Supreme Court will probably decide the question pretty soon, and I merely wish to say that it is up to us to protect ourselves and not be so ready to respond to calls where no one is legally responsible for the payment of our bills. The question of permitting an innocent man to suffer of course is always with us. We could give temporary relief if necessary to save a man's life, but by concerted effort and action I think we can impress the public mind as to the justness of our position, and that we should be paid for our service, and not as is now the case under this law, be forced to accept whatever might be dealt to us in such cases.

Dr. L. A. Yarbough: I will read a letter I received on the subject now under discussion. We have a large cotton mill up there in Covington, and on May 15, 1921, I was called at three o'clock in the morning by the superintendent to go to the cotton mill as soon as I could; that his watchman had been assaulted and shot, and he was injured pretty badly and was bleeding profusely. He was treated and my bill, while not quite as large as Dr. Smythe's, was \$385. I presented my bill to them by the time I thought he was beginning to get better, and was

about well as he could get almost, and here is the reply which I received to that letter:

"Dr. L. A. Yarbough,

"Covington, Tenn.,

"Dear Doctor:

"The Tipton Cotton Mills has forwarded to us your letter of March 16th relative to your fees.

"You are no doubt aware of the fact that under the compensation law, the only liability of an employer or of the employer's insurance carrier for medical attention is to the maximum amount of \$100. There has already been expended in behalf of this employee for medical attention the sum of \$10, leaving a remaining liability under the law of the employer or insurance company of \$90. We are herewith enclosing our check in that amount to your order, which is in full of any liability under the compensation law.

"The law provides that any bills over \$100 continue to be the direct debt of the employee himself as prior to the compensation law. Therefore, in the absence of a written promise of some other person to pay any part of the bills over \$100, you must look to Mr. Taylor himself for the balance due you. You are invited to make the closest examination of the law on this subject, and you will find that we are correct in the statements made herein, and no further liability can be enforced upon the employer or insurance company under the terms of the compensation act of the State of Tennessee."

Now, the company was the Oneida Mills at that time. After a few months they made an assignment and went into bankruptcy. If they had been a reliable company like Dr. Smythe's, I would have filed suit and tested it out in court like he is doing, and take it to the Supreme Court before I would have submitted to it at all. But because of the financial condition of the company, I could not do that. Another thing was that this work was done on the telephone order of the superintendent, and we didn't even think it was safe to bring him to the hospital at Memphis, and also partly because he wanted to, I had him stay at home during all the time.

"In view of the extensive services you rendered, it is regretted that we cannot better secure to you the payment of your full bill,

but no doubt in time the full amount will be paid you by the injured himself.

"Very truly yours,

"Burdette Garrison,

"Superintendent."

Now they are paying this man a different salary from that which they paid him before he was injured, as he is not able to do the work he formerly did, and I doubt if he is making enough now to really get along in comfort, and yet they tell me to look to him for my pay.

Dr. Robert Caldwell: I have a case in hand in which the patient was sent to me with a written statement for me to wait on this patient by the manager of the factory, and I filed this statement, and when my bill came due the insurance came around and gave me this same \$100 song. I said, "I am not dealing with you in any business at all; I have nothing to do with you, don't know you." I said, "I have a statement here signed by the man authorizing me to do this work and he did it as the agent of his factory, and I am looking to him for it." I told the insurance people that I wouldn't take one cent less than my full bill, and the insurance company then paid me my full bill without another word. You see, I had it in writing that I should take charge of the patient, and when I had it, the insurance paid the full amount of the bill.

Dr. W. E. Gallion: I think you are right; that the agreement must be made with the people from whom the invitation comes to do the work. I don't think this law is a matter to be tampered with by us at all. Let them set out their bills the way they want to, but let us go to the people for whom these men are working and tell them they are doing an injustice to the injured man himself. For us to lobby through the legislature over there some bill that might be a little more satisfactory to us, we don't have to do that, but we must understand that we must have a written agreement, and anything else is not worth anything. We must have the signature of the superintendent or the man in authority to go ahead, and then we are safe.

Dr. West: I agree with Dr. Smythe that the destiny of the medical profession is within their own hands, but I believe that this des-

tiny may be affected by an active medical organization, and it is not going to be affected by a lot of talk. If we had all the gas we have been expending around here about this and other like matters for the last eight years, it would float the biggest airship Germany ever put into operation, but when it comes right down to action, we haven't got it. Now, I am going to tell you again, because I hope it is going to do some good to tell you, that for the last eight years we have worked on this faithfully, to try to get you to do something about it. Dr. McCabe shakes his head back there, but if he hadn't been a member of that committee, I wouldn't have done anything either. But after all, I and others have done to try to interest this society in this very matter, I have had a number of our members who have been caught to ask me why I ever let the legislature put a thing like that over on the medical profession in this state. You have had it before you more than once. If you will look at the files of the Journal, you will see where we have kept it before you for all these years. I don't agree with Dr. Crook at all. You will have to take some action with your legislature, but it has to be an intelligent action, and it has to be backed up by this organization. If you are going to appoint a committee and have them look after it entirely by themselves and get no credit for what they have been doing, except to be called politicians, then you cannot get anywhere, but if you will get busy and help and back up this committee, you can do something with this or any other matter. Our members must begin at home with the men who will represent them in the legislature.

The Chairman: Gentlemen, there is a motion before the House to adopt the report of the Committee on Social Insurance as reported this morning.

The motion was carried.

The Chairman: The next matter on the program this morning is the report of the Committee on Hospitals.

The Secretary: Mr. Chairman, I believe that right now is a mighty good time to allow or to refuse to authorize the expenditure of money for the purposes as outlined in the report of the Committee on Social Insurance.

The Chairman; Gentlemen, if the matter be put in form it will be entertained, but in the absence of a motion we can't waste any time, and if someone is disposed to put the matter in shape and present a resolution bearing on the subject, it will be heard when presented.

Dr. J. L. Crook: I offer to suggest all these things are matters of education, and we must rely upon publicity in order to inculcate the matter in the minds of the business people. I think it would be wise if you put forth a resolution which would be given publicity as the action of the medical profession of Tennessee that the present workmen's compensation law is unjust to both sides, and that a fee of \$100 to cover medicine, hospital and nurses' bills is out of the question.

The Chairman: Is that in the form of a motion?

Dr. Crook Yes, sir.

The Chairman: Do I hear a second?

Voice: Second the motion.

The Chairman: It is moved and seconded that the House of Delegates vote a resolution to the effect that the Workmens Compensation Law is working a detriment to the profession of Tennessee and it is . . .

Dr. Crook (interrupting): I will write that out a little bit later.

Voice: And include hospitals.

Voice: And nurses.

The Chairman I wish you would reduce that to writing before we put it, and if any of it is objectionable, we can strike out what we want to. I wish you would work on that now, and the resolution will be presented later by Dr. Crook.

Dr. McCabe: How much money can we expend?

The Chairman: Can the Secretary tell Dr. McCabe.

The Secretary: Mr. Chairman, the Treasurer shows a balance on hand of \$5,862.36. You may expect an income during the year, including this balance, of approximately \$10,000. The cost of operation last year was \$8,400. Now, with the advanced dues between January and April next year, we will probably have a balance of approximately \$6,000 after we have paid the expenses for this year, unless there is some unusual expendi-

ture. I think the treasury will be in shape to pay a reasonable expense.

Voice What would Dr. West suggest?

The Secretary: I think \$150 to \$250.

Voice: For each member of the committee?

The Secretary: It appears to me it don't make any particular difference if it is not more than that.

The Chairman: I would suggest, gentlemen, in order that we may conserve our time, since Dr. Crook has taken this matter up, that any of you that care to submit to him any suggestions you think necessary, and then we can discuss them all when the resolution is presented.

Dr. McCabe: I move that the sum of \$500 be set aside for this purpose and that it be used in the furtherance of this cause.

The Chairman: And distributed by whom?

Dr. McCabe The Legislative Committee.

A Delegate: I second the motion.

The Chairman: Gentlemen, there is a motion before the House and seconded that there be set aside a fund of \$500 for legislative purposes only, to be distributed by the legislative committee.

The Chairman: All in favor of the motion let it be known by saying "Aye." Opposed by like sign.

(The motion was carried).

The Chairman: We are ready to hear the report of the Committee on Hospitals.

Dr. Smythe: Mr. Chairman, I am not ready to submit my report. I haven't had a conference with the other members yet. I hope to get it ready sometime today, when I will present it.

The Chairman: You want to defer it?

Dr. Smythe Yes, sir.

The Chairman: The report is deferred. We will hear the report of the delegates to the A. M. A. Dr. Newell hasn't arrived, and we will probably hear that later.

Dr. Crook: Mr. Chairman, there was one report yesterday that was not complete—the treasurer's report of the Committee on Medical Defense.

The Chairman: Yes, let's have that.

Dr. Crook: I want to put this as an addenda to the former report.

(This is included in the Report of the Com-

mittee on Medical Defense, which appears in the April Journal).

Dr. Crook: We have been able to secure the very best attorneys everywhere at very reasonable fees, and we have been uniformly successful in fighting our cases. Practically all of this fund is for attorneys' fees, and now we have competent attorneys all over the state to look after and conserve the interests of the profession in these malpractice cases as they arise.

The Chairman: Gentlemen, we will now hear the Councillors' Report. We would like to hear from the First Congressional District, Dr. Fox of Greenville.

Dr. C. P. Fox: It is rather discouraging to me, after fifteen years as councilor for the First District, not to be able to give a better report, and I am sincerely sorry that I have not been able to do so, but as you gentlemen know, we have a very mountainous district with a very few physicians in a number of these counties, and it seems impossible to keep an organization in a large number of the counties. This year we have only been able to get reports from six organized counties in upper East Tennessee. The organized counties are Sullivan, Carter, Johnston, Washington, Green, Cocke. Union is a very small mountain county with few physicians, and there is nothing to report from it. Hancock has no railroads and it has been impossible to get an organization in that county. Hawkins County fails to report. I believe, Mr. Secretary, they reported to you.

The Secretary: That was not done for last year.

Dr. Fox: I have written a number of letters to the Secretary, and have been unable to get a report. It would be a great relief to me if this is the end of my service this year, and if you would elect as councilor somebody else that might be more successful in organizing the counties in the first district than I have been. I submit the following report.

(This report will appear as a part of the general report of the Councilors.)

The Chairman: Gentlemen, you have heard the report from the First District. The next is the Second, Dr. S. R. Miller, Councilor.

The Secretary: Mr. Chairman, I have Dr. Miller's report with a letter which I expect ought to be read along with the report. This is the first time that Dr. Miller has missed attending a meeting of the medical association in twenty-six years. He is one of the most faithful members the association has.

(Dr. Miller's report will be a part of the General Councilors' Report).

The Chairman: The next is the Third District, Dr. J. A. Hardin, Councilor.

The Secretary: Dr. Hardin is not here.

The Chairman: Is his report in?

The Secretary: His report has not been received.

The Chairman: We will pass to the Fourth District, Dr. Shipley, Councilor.

The Secretary: Dr. Shipley's is on the desk.

(This will be included in General Councilors' Report).

The Chairman: The next report is from the Fifth District.

The Secretary: I have a partial report, Mr. Chairman, that has been submitted by the Secretaries of Rutherford, Lincoln and Marshall Counties. It is not complete for those counties. The other counties have not been heard from and these will be made a part of the general report.

The Chairman: The Sixth District, W. C. Dixon, of Nashville.

The Secretary: Dr. Dixon's is on the desk. (This report will be included in the general councilor's report).

The Chairman: The Seventh District, M. A. Beasley. Dr. Beasley's report was submitted and will be a part of the general report.

The Chairman: Gentleman, the Secretary has a very important announcement to make.

The Secretary: I have a very important communication from a new member that come to us without election. I will read you the message. (Telegram read announced birth of seven pound boy to Dr. S. R. Miller. Long and continued applause).

Dr. Sheddan: I move that the Secretary of the Association be instructed to wire Dr. S. R. Miller congratulations.

VOICE: Second the motion.

The Chairman: It is moved and seconded

that the Secretary wire Dr. S. R. Miller our congratulations.

(Carried)

The Chairman: The next District is the Eighth, Dr. S. R. Herron.

The Secretary: Mr. Chairman, Dr. Heron's report is on the desk.

(Report was read and will be a part of the general Counciler's report).

The Chairman: The next is the Ninth, Dr. E. H. Baird.

(This report was read and will appear in the general Councilors' report).

The Chairman: The Tenth District, J. L. McGehee.

(Dr. McGehee presented his report, which will be included in the general report).

The Chairman: Gentlemen, you have heard the reports from the different districts of the state. A motion is in order for their disposal.

Voice: I move they be adopted.

Voice: Second the motion.

The Chairman: It has been moved and seconded that the reports be adopted as read.

(The motion was carried).

The Chairman: Now, gentleman, the next item of business is the election of the Councilors for the present year. The odd numbers are to be elected. Congressional districts 1, 3, 5, 7, and 9 are to be elected at this meeting. Nominations are in order for the Councilor for the First Congressional District.

Dr. Sheddon: I don't think we could do better than to continue with Dr. Fox, of the First Congressional District. In fact I believe he is the only member from the First that is here, and I move that he be elected.

Voice: Second the motion.

The Chairman: Nominations for Councilor for the Third District.

Voice: Mr. Chairman. I nominate Dr. W. J. Breeding.

The Chairman: Any others? (No response). Nominations, Councilor from the Fifth Congressional District.

Voice: I want to nominate Dr. J. P. Taylor from the Fifth Congressional District.

The Chairman: Nominations for the Seventh District.

Voice: I nominate Dr. M. A. Beasley.

The Chairman: The Ninth District.

Dr. J. W. Sanford: I nominate Dr. E. H. Baird, of Dyersburg.

The Chairman: Gentlemen, if it meets with the approval of all of you we will hear a motion as to how to elect the gentlemen.

Dr. Sanford: I move we elect them by acclamation.

Voice: I second the motion.

The Chairman: It is moved and seconded that we elect the nominees by acclamation.

(The motion was carried).

The Chairman: The chair will declare the election of, Drs. C. P. Fox, Sr., W. J. Breeding, J. P. Taylor, M. A. Beasley, these five men, and E H Baird, as Councilors for the 1, 3, 5, 7, and 9 Districts, respectively.

The Secretary: Mr Chairman, I would like to announce that a meeting of the Board of Councilors, is supposed to take place immediately after the meeting, and I hope all present well be here. It will only take a few minutes to organize.

The Chairman: I would like to announce for the nominating committee that they are to meet in this room immediately after this meeting is over.

Dr. Gallagher: Inasmuch as we have been informed from the American Medical Association that three delegates will be asked for from the Tennessee State Medical Association, and inasmuch as Chapter IV., Section 8, of the By-laws of this organization reads as follows:

"It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-laws of that body in such a manner that not more than one-half of the delegates shall be elected in any one year," and inasmuch as it is an impossibility to send or to elect one and a half delegate at any one time, I propose to following amendment to the By-laws of the Association: Be it resolved by this House of Delegates that Chapter IV, Section 8, of the By-laws of this Association be amended so as to read as follows: "It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-laws of that body; that there shall be three delegates, one from each grand division

of the state, who shall serve for a period of three years,"

The Chairman: Gentlemen, this resolution is submitted, and according to the By-Laws will have to be laid on the table today for consideration and then reread and passed tomorrow before the election of officers.

The Chairman: We will hear Dr. Crook's resolution now.

Dr. Crook: I tried to condense this, gentlemen, and I want you to give it careful consideration because if it don't suit the body, we can tear it up and reframe it.

"Resolved, That the members of the Tennessee State Medical Association in meeting assembled, unanimously condemn that portion of the Tennessee Workmen's Compensation

Law which limits the liability to the employee for hospital, surgical, medical and nurses' services to the sum of one hundred dollars. This arbitrary limitation of liability to injured employees on the part of employing corporations and insurance companies imposes an unjustifiable hardship on the employees, the hospitals, the nurses, and the physicians, because this sum is wholly inadequate to provide the care and service required by the injured employees in all serious cases.

The Chairman: Gentlemen, that has been adopted without objection.

The Chairman: If there is no objection to the resolution as read, it will be adopted by the motion as previously passed. The motion to adjourn is in order.

Adjournment was taken until 1:30 P. M.

SESSION HELD APRIL 12, 1922, AT 1:30 P. M.

The Chairman: The house will please come to order. We have just a little unfinished business before we take up the matter of new business. And the committees whose reports were not received will be called for this once more. Is Dr. Tigert in the house, Chairman of the Committee on Public Health and Legislation? That committee is passed. The Committee on Public Health and Public Instruction, Dr. Crockett, Chairman; we have no report from them. The Committee on Cancer, Dr. Haggard, not present. The Committee on Education.

Dr. W. J. Breeding: I am a member of that committee, but I have not met the chairman, and we have not been called together. I am ready to do my part any time the chairman is present.

The Chairman: Now, gentlemen, we are ready for new business, if there is any ready.

Dr. D. J. Roberts: Mr. President, I don't want to take up much of your time, but having been present at the meetings of this Association for a number of years, having served as Register for six years or more, then president one year, then secretary for three years, I think I know something about the

rules. There is a Committee on Memoirs; a committee that has never shunned its duty in the past. It has a duty that we owe our brothers. I know that I am so near the end of my course, I will just speak briefly. I will not take up your time. I offer this: "Resolved, That the Committee on Memoirs be composed of the Secretaries of the County Societies and that the Secretary of the Tennessee State Medical Society be the Chairman of said committee. Be it further resolved, that it shall be the duty of each county secretary to inform the chairman of the State Committee of the death of any of the members of his society, and any information obtainable thereto and the Chairman of the Committee shall compile the data of same at each annual meeting of the Medical Society." I move the adoption of this resolution.

A Member: I second the motion.

The Chairman: You have heard the motion offered by Dr. Roberts and seconded. All in favor of the motion, let it be known by saying "Aye."

The motion was carried.

Secretary: I would like to say in that connection, that all notices of death I have re-

ceived as Secretary and Editor of the Journal, have appeared in the Journal. The only other source of information other than reports of county secretaries that I have is what I can get from the newspapers. But the Committee on Memoirs has not written a decent report, to my knowledge, since 1910.

The Chairman: Gentlemen, we are going to have the secretary announce the report of the Councilors' meeting, and you will understand that these reports from the Council are final and cannot be discussed in this house. You will hear the report and say nothing.

The Secretary: Mr. Chairman and Gentlemen: The Board of Councilors directed me as ex officio secretary of that body, to report to the House of Delegates, that by motion which was put and carried by the Board of Councilors, after due consideration in the case of Dr. F. B. Hulme and of the Giles County Medical Society, the following report be made to the House of Delegates:

"This Council recommends to the House of Delegates that, because the Giles County Medical Society is in a state of rebellion against the Tennessee State Medical Association, and has been in such rebellion since April, 1921, the charter of the Giles County Medical Society be revoked." This action was taken by the unanimous vote of the Board of Councilors.

The Chairman: Gentlemen, that is final.

The Secretary: That is the recommendation of the Councilors to the House of Delegates, and the action by the House of Delegates with respect to the revocation of the charter will have to come up, I take it, in the regular order of business. With respect to the case of Dr. W. N. Lynn, and the Knox County Medical Society, the finding of the Council was as follows, and I am ordered to make this report to the House of Delegates. "The Board of Councilors find that the case of Dr. Lynn and the Knox County Medical Society be remanded to the Knox County Medical Society for adjudication under the provisions of the constitution and by-laws of that Society, which directed that the Council of that Society shall arrive at a conclusion and duly provide for appeal, and that is the sense of the Board of Councilors that this case has not come to them in due process, in that the

findings of the Council of the Knox County Medical Society were amended in open meeting of the Society without the evidence having been heard and without due notice of appeal having been given."

The Chairman: Motions will be entertained to adopt this report from the Councilors.

A Delegate: I move we adopt the report of the Councilors.

A Delegate: I second the motion.

The Chairman: It is moved and seconded that the report of the Councilors be adopted and ratified.

(This motion was put, and declared carried).

The Chairman: We are under the head of new business. Proceed.

The Secretary: Mr. Chairman, I take it that the House may act now or later, at its pleasure, upon the recommendation of the Councilors with respect to the revocation of the charter of the county society affected by the recommendation.

The Chairman: That action did, did it not, in adopting their report, amount to revocation of the charter?

The Secretary: That was a recommendation to the House of Delegates by the Councilors and all action with respect to revocation of the charter will have to be taken by the House of Delegates, I think.

The amendment proposed by the Shelby County Medical Society last year to amend the By-Laws was found to be without effect by reason of the fact that no amendment was offered to the constitution covering the same matters. Dr. Everett, it appears to me . . .

Dr. Everett: After thinking this matter over, I think it would be better and wiser for the amendment as proposed, to be withdrawn, and if we later decide to amend, very well. On behalf of the Shelby County Delegation, I ask to be allowed to withdraw the amendment.

The Chairman: If the House does not object, the amendment will be withdrawn. It is withdrawn. Mark it so.

The Secretary: Mr. Chairman, there is a matter—one or two matters in the secretary's report I would like to get action on. One was with respect to the fact that most of the

county societies have lost their original charters. The preparing of these charters is rather an expensive proposition, but it appears to me that every county society should have its charter, and I therefore recommended in my report that the House of Delegates authorize the issuance of new charters to all county societies—I believe that is an important matter, and that that action ought to be taken. I have requests from two societies, one of which was the Shelby County Society, that a new charter be issued to them; and because of the legal requirements of certain societies, I think it is highly important that this be done. I would like for somebody to move to that effect.

Dr. McCabe: I move that the proper authorities issue new charters to all the counties.

A Member: I second the motion.

The Chairman: Gentlemen, there is a motion before the house that the proper authorities be ordered to issue new charters to the County Societies of the state. All in favor of the motion will make it known by saying "Aye."

The motion prevails.

The Secretary: I should like to have instructions with respect to the disposal of the little fund of \$21.86 which is in my hands. The "tail end" of the fund raised at Knoxville in 1915. There was a balance of \$18.00 left after expenditures ceased on that fund in 1916 that has drawn interest since that time and now amounts to \$21.86.

A Member: What was the fund for.

The Secretary: For the prosecution of illegal practitioners.

A Member: I make a motion that fund be diverted to the general fund.

A Member: I second the motion.

The Chairman: It is moved and seconded the fund be diverted to the general fund.

The motion prevailed.

The Secretary: Mr. Chairman, there was one more suggestion contained in the Secretary's report which I would like to represent for whatever it is worth. That is; in view of the fact the centennial year of the Tennessee Medical Association is not so far off in the future, that action be taken by this House

now to provide for a compilation of the history of the Tennessee State Medical Society, in order that it may be completed as far as possible for the use at the centennial meeting of the Society, eleven years from this date. I think the history of the Society, which is one of the oldest in the country, ought to be written. It is going to be a job of considerable difficulty to do it, but I think we owe that much to the memory of the members of the profession in this state, that have made a splendid history for the profession. I should like very much that some action be taken on the suggestion.

Dr. Breeding: At Dr. West's suggestion I move we appoint a committee of senior members of this Association to make a compilation of the history of this organization at the celebration of its one hundredth anniversary.

A Member: I second the motion.

The Secretary: Do you mean the President or the Speaker of the House of Delegates shall appoint.

Dr. Breeding: The Speaker of the House of Delegates.

The Chairman: What kind of a committee, how many?

Dr. Breeding: A committee of five, of the senior members of the profession. The oldest members, like Dr. Roberts, who knows the early history of this organization.

Dr. J. P. Taylor: Why not make it a committee consisting of nine men, three from each grand division, the senior members of the profession?

The Chairman: The smaller the committee the better work you will get.

Dr. D. J. Roberts: I offer an amendment making it consist of ten members, who shall select one man at the next meeting to do the work and pay him for his work.

The Chairman: I motion has been made, gentlemen, to appoint a committee to compile a history of the Tennessee State Medical Society; a motion in lieu by Dr. Roberts is that a committee of 10 men be appointed for the purpose of meeting one year from now and elect an historian, or one man for historian, to do this work and that he be paid for his services. A motion in lieu is before the house. Is there a second to the motion.

A Member: I second it.

The Chairman: A motion in lieu is before you. All in favor of this motion make it known by saying aye.

The motion prevailed.

The Secretary: Mr. Chairman, one new society was organized and has paid dues and made its report in due form for the year 1922, which has never had a charter. And I want to move that charter be given to the Marion County Medical Society.

A Member: I second the motion.

The Chairman: It is moved and seconded a charter be issued to the Marion County Medical Society. All in favor of this motion will make it known by saying aye.

The motion prevails.

The Secretary: I have a communication from the Secretary of the Council of Health and Public Instruction of the American Medical Association. He requests that a committee on Health problems and Education, made up of one officer, one ophthalmologist, one pediatrician, and two general practitioners, shall cooperate with the committee from the State Educational Association for the improvement of health conditions in the public schools. Forty two states have appointed such committees.

The Chairman: You have heard the reading of this communication by the Secretary from Frederick R. Green, of the A. M. A. What shall I hear from you?

A Member: I make a motion that that committee be appointed.

The Chairman: Does that meet with a second?

The Secretary: It is moved and seconded a committee on Education

The Secretary: I think you ought to definitely decide whether you want a committee or not. There is no use to appoint one unless you really want one and unless it will function.

The Chairman: Gentlemen, you have heard the motion. All in favor of this committee being appointed let it be known by saying aye.

The motion prevails.

The Secretary: I have nothing else to present, Mr. Chairman.

The Chairman: Gentlemen, the Secretary has finished his report and we are now under the item of new business. If there is anything to come before the House of Delegates,

we would like to hear from you. If not, an adjournment will be order until tomorrow morning.

Dr. Roberts: Mr. Chairman, our Constitution and By-laws it seems to me have been amended quite a number of times since we had them printed. I would just like to ask our Secretary, if we have not had a number of amendments that do not appear in this pamphlet. Only three. I know the Chairman of the House of Delegates and one or two others made amendments. I had in mind to inquire if there was some way we could get those provisions or those amendments so they could be attached to our present constitution and by-laws.

The Chairman: Make a motion to have them reprinted.

Dr. Roberts: I would offer a suggestion there gentlemen. I think we ought to keep our constitution and by-laws pretty well before the people. They so many times come here and are ignorant of them. Therefore I suggest that they be printed in the Association Journal every four years, quadriennially. They will not cost much and it will be interesting reading to a great many people who would get it that way that would not get it otherwise. They might be induced to become members of the Association. They ought to be more conversant with it, and to print it quadriennially in the Association Journal, it will be at hand all the time.

Dr. Gallagher: We are thinking too far ahead—talking about eleven years from now, and we are now going to have something done every four years. I think it highly desirable that we should be familiar with the constitution and by-laws. And this House of Delegates has been a little free with the money, appropriating a good deal. I think the most conservative way to get it before each one would be to print the amended constitution and by-laws in the Journal. I therefore move that the Secretary be instructed that the constitution and by-laws as amended, be published in the early numbers of the Association Journal.

The Chairman: You make it as a motion?

A Member: Yes, sir.

A Member: I second it.

The Chairman: It is moved and seconded that the Secretary-Editor be instructed by the

House of Delegates to print the amended by-laws and constitution in the Association Journal. All in favor of the motion, make it be known by saying aye.

The motion prevails.

The Secretary: Gentleman, if there be any new business to be presented it ought to be presented this afternoon because we will not have much of a delegation in the House of Delegates tomorrow, if we follow the usual precedent, and I hope if there is any new business to be presented, that it will be brought up now.

The Chairman: We are ready to hear you gentlemen, if there is any new business to offer. Remember the House of Delegates has only one more meeting which occurs tomorrow morning at 8:30, at which time the election of officers will take place, and the final and last reports of different committees may be presented.

Dr. R. E. Fort: Mr. Chairman, I was not in the hall when the report of the Council with reference to the protest filed from Giles County was read; but I am here now and I am going to move that the House of Delegates revoke the charter of the Giles County Medical Society, as recommended by the Councilors.

The Chairman: Does this motion meet with a second, gentlemen?

A Member: It has already been passed and disposed of.

The Chairman: The report, gentlemen, of the Council has been accepted and adopted.

Dr. Fort: Therefore your ruling is that the charter is revoked and no other motion for revocation is necessary; that is your ruling?

The Chairman: I believe the adopting of this report automatically revokes the charter.

Dr. Fort: That is your ruling on that.

The Chairman: I could be wrong, but that is my ruling.

Dr. L. J. Andrews: I will second the Doctor's motion.

The Chairman: Gentlemen, there is a motion before the House made by Dr. R. E. Fort, that the charter of the Giles County Medical Society be revoked, seconded by Dr. Andrews.

The motion was put and carried and so declared by the Chairman.

Dr. C. A. Abernathy: In justice to the Giles County Medical Society, I am going to ask this House of Delegates, to listen to the resolutions passed by the Giles County Society. I think this is snap judgment taken on the Giles County Medical Society without any hearing; and I am going to ask that this matter be presented to this Delegation here. I am going to ask this matter be reopened. I want the resolutions passed by the Giles County Society to be read to this House of Delegates.

The Chairman: Doctor, if you will permit me—this matter should have been presented to the Council; it don't come to the House of Delegates except through the Council. We cannot hear it on reopening. They must go before the Council. It has been ordered there. They passed upon it, their report adopted and vote has unanimously been passed to the effect that the charter be revoked. The House of Delegates will close the matter at this point.

Dr. Abernathy: I am going to say that the Giles County Medical Society has had no information and no intimation of anything of the kind. We have not had any information of that, we didn't know that was going to be done. We didn't expect it to be done. We passed the resolutions.

The Chairman: Doctor, this matter is passed. you are out of order; there is nothing before the house.

Dr. Abernathy: Well, sir; I desire to take an appeal to the American Medical Association; we cannot have justice done us here.

The Chairman: That is clearly within your right.

Dr. Abernathy: I think it an injustice on the Giles County Medical Society; it is an outrage; it is one of the best societies in Tennessee; it has as true and loyal men as are in Tennessee. I do believe a great injustice has been done the Society and I do not hesitate to say so; I think it is snap judgment. It passed resolutions that were transmitted to the Councilors of the Seventh District of the State. Where are the resolutions? We ask that you reopen this case.

The Chairman: You will have to go before the Council for that I presume, Doctor.

A Member: I move we adjourn.

A Member: I second the motion.

The Chairman: A motion is made and seconded that we adjourn.

The motion prevailed.

An adjournment was here taken until 8:30 A. M., April 13th, 1922.

SESSION HELD APRIL 13, 1922, AT 1:30 P. M.

Dr. A. F. Richards, Speaker of the House of Delegates in the Chair, with a quorum present.

The Chairman: Gentlemen, the House will come to order. We will first hear the Secretary read the minutes.

The Secretary: Mr. Chairman, I have the minutes here and the Speaker of the House has looked over them.

Dr. McCabe (Interrupting): I move you, Mr. Chairman, that the reading of the minutes be dispensed with.

Voice: I second the motion.

The Chairman: It is moved and seconded that the reading of the minutes of yesterday's meeting be dispensed with.

The motion was carried.

The Chairman: There is the proposed amendment to the by-laws on the Secretary's desk which will be read now.

(This is the amendment relative to Delegates to the A. M. A.).

Dr. Yarbrough: I move it be adopted.

A Delegate: Second the motion.

The Chairman: Gentlemen, it is moved and seconded that this matter be adopted as read.

The motion was carried.

The Chairman: The next matter before the House of Delegates according to the constitution is to receive the report of the Nominating Committee.

The Secretary: Mr. Chairman, may I be allowed to present the report of the auditing committee, duly signed by the committee, and which report of the Treasurer has been examined and approved?

Dr. Sanford: Move we adopt the report and that the committee be discharged, and the report printed in the Journal.

Voice: Second the motion.

The Secretary: Doctor, if you will allow me, to publish all this report in the Journal will cost considerable money—

Voice: Don't publish it.

The Secretary: The Treasurer's Report will be published, but all the individual items

for receipts from advertising will not be published because it will cost too much. The expenditures will all be published and the general summary showing receipts, balances, etc.

The Chairman: All in favor of the motion to accept the report of the committee let it be known by saying "I."

The motion was carried.

(The Treasurer's Report was printed in the April Journal.)

The Chairman: There are some committees that had been held over for this morning's report. The committee on Hospitals—no, first—excuse me, doctor, I will get you in a minute—the first committee was the committee on Education, of which Dr. McElroy is Chairman.

Dr. McElroy: Mr. Chairman and gentlemen of the committee, we must ask you to excuse us for not submitting a written report, but we have gotten together, Dr. Breeding and myself, the other member of the committee being absent, and we will submit some suggestions to you and facts as we find them. We find that Medical Education in the United States is expanding in two directions at the present time; first, as to the education of men who treat the individual sickness, that is education of doctors who treat the individual patient; and second, the one that is by far the more prominent at the present time, is the education of men who treat the sick community of the whole, or the education of men who will engage in the extension of public health service.

Now it has been urged from some quarters there is a lack of doctors at the present time by virtue of some facts or factors, and so we are being urged by the Council of the American Medical Association to admit men students to our medical schools without being so stringent as to the requirements for admission, but we of the committee are under the impression that there is not so much of a deficit in numbers, but rather an unequal distri-

bution of the members of the profession. For instance, those men who are undergoing training at the present time under the present requirements do not find themselves willing as a rule to locate in a rural district, and it is a usual tendency for them to go to the city. I think particularly that this is not the result of the training now being given, but it is a result of a lack of facilities in these districts for men so trained as at the present time to put into execution their training.

We believe that the medical profession by the education to the public to the necessity of having hospitals where doctors are called for diagnosis and scientific endeavor can have the proper instruments and means at their command, and we would urge that these men with this training to locate in the country districts. So that we think, therefore, that the profession and the state as a whole could do a great deal by educating the public to the necessity of establishing more district hospitals, where men could receive all of the advantages of scientific medicine.

We don't think that the standards as they now exist for the education of medical students should be changed either one way or the other. We think they are high enough, and we think in this part of the country they are amply sufficient, and we don't think the five year requirement in the hospital as to internship necessary at the present time, but we do think there is a great need to have some check on the young men who do enter hospitals by which they can receive efficient work and continuous work from the doctor of the hospital during the year. As it now stands, after a man has obtained his diploma and enters the hospital as a medical intern, if he doesn't understand something he quits, and if we had some understanding by which this man has to enter into this internship and have his diploma held in trust by the institution from which he is received to be delivered to him on a satisfactory completion of his intern year.

Now the question of education for public health work is a great one. It was my privilege a few months ago to attend the conference called by the Surgeon General for a conference for the consideration of the public health in the United States. We all had some

idea about the difficulty which the doctor is subjected to in order to get authority to practice medicine, but we have an easy birth compared with the public health man. A man up there has to have a baccalaureate degree, an M. D. degree, and two years of work in the public health school before he can get this degree. If, as some of you say, we have to spend a great part of our life preparing to be doctors, we have a very easy birth by the side of those men. But it developed in the conference that the profession and the medical school had very little comprehension for what is necessary to do to become a public health man. We don't believe that at the present time educated men have to be specialists in bacteriology or entomology or vital statistics or industrial medicine, but we can do a great deal in order to impress upon the student the thing he has to do in order to conserve our public health and what a public health man must do. We can do that by teaching them what they must do in order to become practitioners or teachers of public health.

There are several things which may be done. It has been suggested that the course be changed in this way; that the men should take the first two years in medicine, and then if the man wants to go into public health that he take two years in public health, and if he wants to go into the other that he take the medical course, and at the end of four years he gets his degree either way. We can do that by impressing upon our students what they have to do, and if we want him to continue in the public health work and in order to get him to do all of these things it is necessary that these things should be fostered by somebody, either by endowment or by state contribution, and I think that the thing that we must do as an organization is to do everything we can to promote the development of medical education both with respect to the treatment of the sick man—the individual man—and also with respect to the development of the treatment of the sick community.

Now, whether it is an endowed school or a state institution, it should have a sufficiency of funds on hand because it takes a great deal of money to conduct a medical school and see that the medical student gets whatever is

necessary in his classes, it takes a great deal more than we can get out of the medical students themselves, and I think the state ought to do it, but as a profession we should do all we can to foster this work, either by endowment or by the state, for the promotion of education by the medical student.

The Chairman: Gentlemen, you have heard the report of the Committee on Education.

A Delegate: Move that we accept it and spread it upon the minutes.

Voices: Second the motion.

The Chairman: Moved and seconded that the report of the Committee on Education be accepted and spread upon the minutes.

The motion was carried.

The Chairman: We will hear now the deferred report from Dr. Smythe, Chairman of the Committee on Hospitals.

Dr. F. D. Smythe: I wish to apologize for not having been able to submit a written report. I wish to state that when appointed Chairman of the Hospital Committee of the State Medical Association and, receiving the names of the personnel of the committee some time thereafter, I addressed a communication to each member of the committee with a questionnaire enclosed requesting that the hospitals in the community be investigated along certain lines, and such other lines as the committee might deem necessary to enable them to make a complete and accurate report of the hospitals in their communities. I desire to say that quite a number of the members of the committee failed to respond at all to the letter, hence I am unable to make a report concerning the smaller hospitals of the state at all, that is hospitals located in the small towns and villages, which I think is a very necessary and important thing and something which in the interest of the public should be done.

The only question which can come before this House of Delegates that is of more importance is the knowledge of what is being done in the hospitals—large and small. We are in a position to check up the larger hospitals better than the smaller ones for the reason that usually the men operating and treating patients in the larger hospitals are fellows of the College of Surgeons, and very few of them dominate the hospital in which

they operate and treat patients, hence they are not reserved in investigating and submitting the facts without having them doctored.

Dr. Newell, of Chattanooga, submitted me a detailed report of the hospitals in his city. He did it at a great deal of expense of time and labor, and I want to say that we should feel proud of the way that the larger hospitals in Chattanooga are conducted at the present time. Still some improvements could be made, but I get it from the report that they are going along the right lines, and that it will be extremely difficult in a short while for an abortionist or a quack or an illegal medical man to gain admission into one of the hospitals in that city at all. That speaks well for the Chattanooga doctors and the Chattanooga public, which means that they have been educated somewhat along the proper lines.

Without attempting to go too far into this matter without a written report, I wish to say that the hospital has several important functions which it should be competent to perform; namely, the education of doctors, the education of nurses, who are the hand-maids and important assistants of the doctors, in the treatment of the sick, and the education of the public. Those three functions must be performed by a hospital if it discharges the duties that it owes to the public and to deserve the patronage which it receives from the public.

We have a verbal report from some members of the committee to the effect that the majority of the institutions are also doing good work. Some improvement is to be made. We are not satisfied, nor will we ever be satisfied until we cease to grow and develop. When a condition of satisfaction sets in with a medical man then a period of decadence has set in; hence the man who is constantly desiring to improve conditions is on the firing line because he is never satisfied entirely with conditions as he finds them in his community. His road is a rough one because he sees the necessity of the interest of the public and in the interest of scientific medicine to make suggestions and constructive criticisms every day regardless of the effect, and of course I must state that he has a rather hard task to perform, but we must be steadfast in our onward direction in the interest of the

public whom we are supposed to serve.

Some of the hospitals in Nashville are small institutions owned and operated by private men, I think, but they are not inspected for the reason that the committeeman is a neighbor and friend of the men who operate the smaller hospitals and did not feel disposed to enter a privately owned institution for the purpose of making an investigation. I think in all probability the investigation would have been satisfactory, knowing as I do the men who are conducting the places, and I don't think they would be a party to anything except that which is the most efficient, but I believe that it is our duty, or the duty of the House of Delegates or the Association, to designate a man clothed with authority from this Association to make investigations of all hospitals, whether publicly or privately owned, and no exception could be taken to the discharge of his duties, because he is simply discharging a duty that he has been assigned to discharge by this organized body of medical men in the state of Tennessee.

The hospitals in the community which Dr. McElroy has suggested as being desirable would be a wonderful addition to the doctors and to the community in which the hospital is located provided you have a real man at the head of the hospital. It makes very little difference, if any, as to the size of the operating room in which the operation is performed so far as the proper performance of the operation is concerned; in fact it matters little whether it is in Guntown, Mississippi, or in New York, the same surgeon could do the same work in either place or in either room provided he had the proper instruments and means at his command, but the mere fact that the hospital is of a certain size or of a certain nature does not mean that the patient is receiving the treatment he should receive, and I think it is up to us to see that this feature of the work is looked after. Many men have organized an institution or hospital or hotel for sick people, and for the purpose of operating and treatment after the operation, without being fully equipped for doing the work that the patient deserves to have done. What it is to the public in a city or a town is a matter that depends entirely on the members of the institution and the

ability and honesty of the surgeon and physicians treating the patients in the hospital.

A man can not be a general practitioner of medicine today and take a long trip through a stormy night and wake up tomorrow morning and say "I am going to do a surgical practice" unless he has been properly trained for doing the work. He is not a surgeon and never will become a surgeon and the public should be protected against his surgical ambitions and aspirations, and I believe that it is necessary to the hospitals, especially the smaller ones, to have both types, and I believe they should be carefully investigated, not for the purpose of destroying, but for the purpose of constructive criticism, especially where the man is honestly endeavoring to do his work in the best way possible, and we must realize the fact that he deserves to exist only so long as he serves the public.

No necessity for the existence of a doctor in town or community is needed unless the community is kept in the condition of health which is commensurate with their ability to produce; otherwise we are but parasites rather than helpers. I think this work is so large it is impossible for one to properly place it before you doctors in the short time of a few minutes and to stress the importance of the hospital to the community, and I think the President of the society should be very careful indeed in selecting the new committee to select them—I mean the members—early and give them time to make investigations so that a report worth while can be submitted to the House of Delegates next year. I personally would be willing to contribute to a fund for the purpose of defraying the expenses of a man somewhat on the order of the man who is sent out from American College of Surgeons to inspect the larger hospitals of one hundred beds or more. It requires funds to make the inspection, and the time and money will be well spent in my opinion.

The Chairman: You have heard the report of the Chairman of the Committee on Hospitals. What shall we do with it?

A Delegate: I move it be received and the committee continued.

Voice: Second the motion.

The Chairman: It is moved and seconded that the report of the committee be received

and that the committee be continued.

The motion was carried.

The Secretary: Mr. Chairman, I have the report of the delegates to the American Medical Association.

(This report appeared in the April Journal.)

The Chairman: Gentlemen, you have heard the reading of the report by the Secretary of the A. M. A. delegates. What disposition do you propose to make of it?

Voice: I move it be approved and published.

The Chairman: Is there a second to the motion?

Voice: I second the motion.

The Chairman: It has been moved and seconded that the report of the delegates to the A. M. A. be accepted as read.

The motion was carried.

The Chairman: In compliance with a resolution passed yesterday by the House of Delegates I will appoint as the committee on getting up the history of the Tennessee State Medical Association, who, according to this motion, are to confer and within a year report at the next meeting, and I appoint on that committee the ten Councilors of the Association. That committee can get this matter in hand. They will make their report as a committee at the next annual meeting.

Dr. Smythe: Mr. President, I suggest that some one take the matter up and be designated as Chairman in order that he may proceed to organize the committee.

The Chairman: The councilors have their Chairman already.

The Chairman: The next matter before the House of Delegates and the final matter of business, except a resolution before we adjourn, is the report of the committee on nominations, which will be followed by election of officers. We are now ready to hear the report from the nominating committee.

To the Speaker and Members of the House of Delegates:

We your Committee on Nomination wish to report as follows:

Nominations for President—Dr. H. M. Tigert, Nashville; Dr. F. J. Runyon, Clarksville; Dr. R. W. Billington, Nashville.

For Vice-Presidents—Dr. H. L. Fancher,

East Tennessee, Chattanooga; Dr. J. R. Bone, Middle Tennessee, Lebanon; Dr. Frank Jones, West Tennessee, Memphis.

Secretary-Editor—Dr. Larkin Smith, Nashville.

Trustees of the Journal—Dr. J. B. Gillespie, Covington; Dr. S. H. Hodge, Knoxville (To fill unexpired term of Dr. C. J. Broyles, deceased.).

Delegates to A. M. A.—Dr. L. L. Sheddan, Knoxville; Alternate Dr. J. B. Hoskins, Chattanooga; Dr. J. A. Witherspoon, Nashville; Alternate Dr. L. E. Burch, Nashville.

Speaker of the House of Delegates—Dr. H. B. Everett, Memphis.

Respectfully submitted,

Committee on Nominations.

Robert Caldwell, Chairman, Nashville, Tennessee; W. E. Gallion, Secretary, Oakdale, Tennessee.

The Chairman: Gentlemen, you have heard the report of the Nominating Committee. Under the constitution of the Tennessee State Medical Association you are required to elect your President by ballot, and I will request that you now prepare your ballots, and that it takes a majority vote of the house present to elect. There are three men whose names appear before you, and if an election is not had in the first instance a second ballot will be had, dropping the hindmost candidate. I will ask Dr. Nichol and Dr. Beasley to collect the ballots.

The ballots were collected and the vote counted.

The Chairman: The Secretary will announce the vote.

The Secretary: Mr. Speaker and gentlemen of the House, the vote for President results in 23 votes having been cast for Dr. Tigert and 1 for Dr. Billington.

The Chairman: Gentlemen, we take great pleasure in announcing the election of Dr. H. M. Tigert, of Nashville, for the ensuing year.

The Secretary: For Vice-President—For East Tennessee, Dr. H. L. Fancher. For Middle Tennessee, Dr. J. R. Bone. For West Tennessee, Dr. Frank Jones.

The Chairman: Are there any other nominations?

A Delegate: I move the nominations be closed and the Secretary be instructed to cast

the unanimous vote of the house.

Voice: Second the motion.

The Chairman: It is moved and seconded that the nominations be closed and that the Secretary cast the vote of the house.

The motion was carried.

The Secretary: Mr. Chairman, I take great pleasure in casting the vote of the House for Dr. Frank A. Jones of Memphis, Dr. J. R. Bone, of Lebanon, Dr. H. L. Fancher of Chattanooga for Vice-Presidents of the Tennessee State Medical Association.

The Chairman: The next will be the election of a Secretary.

The Secretary: Mr. Chairman, the committee has submitted the name of Dr. Larkin Smith, of Nashville, for Secretary-Editor for the ensuing year.

Dr. McCabe: Mr. Chairman, I move that the nominations be closed and that Dr. Larkin Smith be elected by acclamation.

Voice: Second the motion.

The Chairman: It is moved and seconded that the nominations for Secretary be closed and that the Secretary be asked to cast the vote of the House of Delegates for Dr. Larkin Smith as Secretary-Editor of the Tennessee State Medical Association for the ensuing year—and may God have mercy on his soul.

Dr. Smith was declared elected by the Chair.

The Chairman: The next in order will be the election of Trustees for the Journal. The Nominating Committee has submitted the names of Dr. G. B. Gillespie and Dr. S. H. Hodge. Gentlemen, you have heard the nominees. How shall we elect? Dr. Hodge is to fill the unexpired term of Dr. Broyles, deceased.

A Delegate: I move that nominations be closed and the Secretary cast the vote of the House.

Voice: Second the motion.

The Chairman: It has been moved and seconded that nominations close and the Secretary be instructed to cast the vote of the House.

The motion was carried, and the Secretary cast the vote of the House. The Chair declared Dr. Gillespie and Dr. Hodge elected.

The Chairman: Election of Delegates to the A. M. A.

There was extemporaneous discussion with regard to the term of the delegates elected.

The Chairman: Gentlemen, this matter can't be fixed now. We can't amend this amendment to the by-laws already adopted without letting it lie on the table for a day, and I am going to rule you will have to elect these gentlemen for three years and at the expiration of their terms the matter can be adjusted, but at present it will have to be so. We will proceed to the election.

A Delegate: I make a motion that the Secretary cast the ballot for Dr. J. A. Witherspoon as Delegate, with Dr. L. E. Burch, alternate; and Dr. L. L. Sheddan, Delegate, with Dr. J. B. Haskins, alternate.

Voice: Second the motion.

The Chairman: It has been moved and seconded that the Secretary cast the vote of the House for these three nominees.

The motion was carried.

The Secretary: Mr. Speaker of the House, I take pleasure in casting the vote of the House of Delegates for Dr. L. L. Sheddan, Knoxville, and Dr. J. A. Witherspoon, Nashville, as Delegates; and Dr. J. B. Haskins, Chattanooga, and Dr. L. E. Burch, Nashville, alternates.

The Chairman: The Chair declares the election of these gentlemen with pleasure. The next item is—

The Secretary: For Speaker of the House of Delegates, the nominating committee has submitted the name of Dr. H. B. Everett, of Memphis.

The Chairman: A motion is in order.

A Delegate: I move that the Secretary cast the vote of the House, and that the speech be limited to one hour.

The Chairman: Gentlemen, the motion before the house is that nominations close and the Secretary cast the vote of the House.

The motion was carried.

The Secretary: Mr. Chairman, I take pleasure in casting the unanimous vote of the House of Delegates for Dr. H. B. Everett of Memphis, otherwise known as the Chancellor of West Tennessee, for Speaker of the House of Delegates.

The Chairman: Dr. Everett is declared elected as the Speaker for the coming year, and I will be glad to turn the gavel over to

him.

Dr. Everett assumes the chair.

The Chairman: Mr. Chairman and Gentlemen, I am sure it is a great privilege to me to assume this office, but I am afraid I will have a hard time in complying with the conditions my friend Dr. Smith has placed upon me, to make as efficient an officer as our retiring Chairman. But I will do the best I can, and without further burdening you with attempting to make a speech I will proceed with business at your pleasure.

The Secretary: Mr. Speaker, insofar as I am advised, there is nothing else to come before the House. It should be borne in mind that this is the last meeting of the House of Delegates, and if anybody has anything to present it should be presented now.

Dr. R. E. L. Smith: I have a resolution which I desire to read.

RESOLUTIONS.

Whereas, Dr. Olin West has resigned his position as Secretary of the Tennessee State Medical Association to become Field Secretary of the American Medical Association; and,

Whereas, Dr. West has served this Association for the past eight years, both as Secretary and Editor of the Journal of the Association; and,

Whereas, For his terms of office the esteem in which he has been held by the members of this Association has been manifested by eight successive elections; and,

Whereas, by his great ability and indefatigable efforts his services have been of inestimable value to the profession and the people of Tennessee; therefore,

Be it resolved, That the Tennessee State

Medical Association in annual convention assembled deeply regrets Dr. West's resignation because it believes that scientific medicine of Tennessee loses one of its greatest assets and inspirations by his leaving the Association and the State; and,

Be it further resolved, That the Tennessee State Medical Association cherishes the hope that he shall meet the full measure of success which he so richly deserves in his new endeavor.

Be it further resolved, That a copy of these resolutions be spread upon the minutes of the Association and that a copy be furnished Dr. West.

W. J. BREEDING, Chm.
R. E. LEE SMITH.
H. M. TIGERT.
J. F. GALLAGHER.

The Chairman: Gentlemen, you have heard the reading of the resolution.

Voice: I move it be received and spread upon the minutes in full.

Voice: Second the motion.

Retiring Chairman: And I would like to suggest to have it read in the scientific session at the end of the report of the nominating committee.

Voice: And I move that the A. M. A. be congratulated.

Chairman: Gentlemen, you have heard the motions before you. What shall we do with them?

Voice: Question.

(The motions were carried.)

The Chairman: Gentlemen, is there anyone else having any matter of business to bring up at this time?

Adjournment.

EDITORIALS

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

APRIL, 1922

THE PRESIDENT FOR 1922-23.

Holland McTyere Tigert, M. D., F. A. C. S., was elected President of the Tennessee State Medical Association at the Memphis meeting.

He is the son of the late Bishop John J. Tigert and Mrs. Amelia T. McTyere Tigert, daughter of the late Bishop H. N. McTyere, and brother of the present United States Commissioner of Education, Dr. John J. Tigert.

Dr. Tigert graduated from the Medical Department of the University of Nashville in 1901, and has been a member of this Association since 1902.

For many years he has had teaching connections in the fields of surgery and gynecology in the medical schools of Nashville.

KNOX COUNTY MEDICAL SOCIETY.

It is the cause of genuine gratification to members of this Association to receive the announcement of the settlement of the differences on certain ethical points between the Knox County Medical Society and some of its members. This desirable consummation was achieved, largely through the plans and efforts of the energetic and tireless Councillor for that District, Dr. S. R. Miller.

Congratulations are due all parties to this now defunct controversy, and let us entertain the hope that similar situations in other county societies may reach the same desirable conclusion.

MAY MEETING OF HENDERSON COUNTY MEDICAL SOCIETY.

The Henderson County Medical Society held its regular monthly meeting Tuesday, May 9, 1922, in the office of the Secretary, Dr. S. T. Parker. The meeting was called to or-

der by Vice-President Dr. R. H. Milam, the minutes of the previous meeting being read and approved. Dr. J. W. Hendrix presented a case for examination, after which the case was freely discussed by all present. Dr. W. I. Howell, of Wildersville, Tenn., reported two interesting cases. Motion made and carried that Dr. S. H. Brazelton be carried on the rolls of our Society as an honorary member. The Society went into discussion as to when and where to have our annual outing. After considerable discussion it was decided to have it at Wildersville, Tenn., on June 20th. Dr. W. I. Howell, C. E. Bolen, and J. W. Hendrix, were appointed a committee on arrangements. Doctors present were Dr. W. I. Howell, Wildersville, Tenn., Dr. J. W. Hendrix, Dr. R. L. Wylie, J. M. Arnold, G. A. Brandon, J. E. Powers, R. H. Miam, and S. T. Parker.

Papers for next meeting by Drs. J. F. Goff, C. E. Bolen and J. E. Powers. There being no further business, the Society adjourned.

MEETING OF THE UPPER CUMBERLAND MEDICAL SOCIETY.

The following communication from the office of the Upper Cumberland Medical Society at Cookeville, Tennessee, is self-explanatory:

The Upper Cumberland Medical Society will meet June 13th and 14th, 1922. This is about two weeks later than the usual time of meeting of the Society. But this change was made necessary in order to avoid a conflict with the American Medical Association which meets in St. Louis on May 22, 1922.

And then another thing to be considered is, the county roads at this time will be much better than in May and hence will insure a much larger attendance of many of the Upper Cumberland Physicians who are forced to come to the Society by way of county roads.

A great and busy session is being planned, and there will be no unnecessary preliminaries or long-winded speeches from local talent on the program.

Z. L. Shipley, M. D. Sec'y.



SECTIONAL SOCIETIES

The East Tennessee Medical Association, the Middle Tennessee Medical Association, and the West Tennessee Medical and Surgical

Association all hold their meetings this month—the program for each one follows:

PROGRAM OF THE MIDDLE TENNESSEE MEDICAL ASSOCIATION, FIFTY-NINTH ANNUAL MEETING, FRANKLIN, TENN.

THURSDAY AND FRIDAY, MAY 11 AND 12, 1922.

Officers: Dr. T. R. Ray, President, Shelbyville; Dr. Milton Tharp, Vice-President, Nashville; Dr. H. H. Shoulders, Sec.-Treas., Nashville.

COMMITTEES.

Arrangements: Dr. K. S. Howlett, Chairman, Dr. J. O. Walker, Dr. B. F. Nolen, Dr. Dan German, Dr. Sam White, all of Franklin.

Essays: Dr. Milton Tharp, Chairman, Dr. T. G. Pollard, Dr. T. D. McKinney, all of Nashville.

New Members: Dr. W. B. Dye, Springfield; Dr. J. R. Bone, Lebanon; Dr. M. A. Beasley, Hampshire.

Complaints and Offenses: Dr. R. S. Perry, Chairman, Columbia; Dr. J. B. White, Lewisburg; Dr. J. F. Loggins, Charlotte; Dr. S. S. Moody, Shelbyville.

The meeting was called to order at 10 a. m., Thursday, May 11th, in the lecture room of the Presbyterian Church.

SCIENTIFIC PROGRAM.

President's Address: "The Dignity and Value of Organized Medicine," Dr. T. R. Ray, Shelbyville.

ESSAYS.

1. Preparation for Breast Feeding: Dr. K. S. Howlett, Franklin. To discuss: Dr. H. K. Alexander, Nashville.

2. Cysts of the Mesentery: Dr. T. G. Pollard, Nashville; to discuss, Dr. E. M. Sanders, Nashville.

3. Report of Cases with Presentation of Specimens: (a) Intussusception; (b) Kidney Stone, (c) Gangrenous Appendicitis, (d) Carcinoma of the Stomach. Dr. W. D. Haggard, Nashville; to discuss: Dr. W. C. Dixon, Nashville.

4. Pneumonia: Dr. W. A. Jackson, Montague; to discuss, Dr. E. M. Fuqua, Pulaski.

5. Treatment of Infectious Diarrhoeas: Dr. O. H. Wilson, Nashville; to discuss, Dr. R. H. Perry, Nashville.

6. Prognosis in Pulmonary Tuberculosis: Dr. W. H. Witt, Nashville; to discuss, Dr. B. G. Tueker.

7. Fracture of the Neck of the Femur: Dr. Bernard Gaston, Lebanon; to discuss, Dr. Duncan Eve, Jr., Nashville.

8. The Etiology of Glycosuria: Dr. O. N. Bryan, Nashville; to discuss, Dr. John P. Grizzard, Winchester.

9. Gall-Bladder Infections: Dr. T. D. McKinney, Nashville; to discuss, Dr. Dan German, Franklin.

10. Report of Case of Rat-Bite Fever: Dr. W. T. Robinson, Shelbyville; to discuss, Dr. William Litterer, Nashville.

11. Glaucoma—the General Practitioner's Responsibility in Its Diagnosis: Dr. Walter Dotson, Lebanon; to discuss, Dr. Eugene Orr, Nashville.

12. Granuloma Inguinale—Lantern Slides: Dr. P. G. Morissey; to discuss, Dr. Perry Bromberg, Nashville.

13. Pneumo-thorax Complicating Pulmonary Tuberculosis: Dr. T. W. Dailey, Nashville; to discuss, Dr. W. S. Rude, Ridgely.

14. What Should Be the Proper Ethical and Economical Relationship Between the General Practitioner, the Specialist and the Public: Dr. J. B. White, Lewisburg; to discuss, Dr. S. T. Hardison, Lewisburg.

15. Personal Observations of Cardiac Lesions: Dr. W. K. Sheddan, Columbia; to discuss, Dr. Jack Witherspoon, Nashville.

16. Tonsillectomy: Dr. Jere W. Caldwell, Nashville; to discuss, Dr. J. A. Scott, Murfreesboro.

17. Pellagra: Dr. M. B. McCrary, Woodbury; to discuss, Dr. B. S. Rhea, Lebanon.

18. Report of Cases: (a) Compound Comminuted Fracture of the Patella, (b) Diph-

theria, (c) Brain Abscess, Dr. J. F. Adams, Bradyville; to discuss, Dr. M. B. Murfree, Murfreesboro.

20. Malnutrition in Children: Dr. John M. Lee, Nashville; to discuss, Dr. W. N. Lackey, Gallatin.

21. Accidental Hemorrhage: Dr. Sam C. Cowan, Nashville; to discuss, Dr. S. R. Teachout, Nashville.

22. Causes of Haematuria: Dr. C. F. Anderson, Nashville; to discuss, Dr. Milton Tharp, Nashville.

23. The Necessary Qualifications for a Life Insurance Examiner: Dr. H. C. Guerin, Nashville; to discuss, Dr. B. F. Byrd, Nashville.

24. Tuberculosis of the Insane: Dr. Geo. A. Hatcher, Nashville; to discuss, Dr. L. E. Ragsdale, Columbia.

25. The Management of the Perineum Following Labor: Dr. L. E. Burch, Nashville; to discuss, Dr. Miller Woodson, Gallatin.

26. The Need of Early Recognition of Symptoms of Urological Lesions: Dr. J. B. Neil, Knoxville; to discuss, Dr. John E. Hall, Nashville.

27. Angina: Dr. Owsley Manier, Nashville; to discuss, Dr. W. A. Oughterson, Nashville.

28. Intestinal Obstruction: Dr. Robert Caldwell, Nashville; to discuss, Dr. R. E. Fort, Nashville.

29. Endocrine Therapy: Dr. J. C. Kelton, Lascasses; to discuss, Dr. J. A. Mitchell, Tulsa.

30. Blood Chemistry in Nephritis: Dr. R. L. Jones, Nashville; to discuss, Dr. J. H. Litterer, Nashville.

31. Ectopic Pregnancy: Dr. R. W. Grizzard, Nashville; to discuss, Dr. G. Cuthbert Williamson, Columbia.

32. Cancer of the Lip: Dr. C. M. Hamilton; to discuss, Dr. J. M. King, Nashville.

PROGRAM EAST TENNESSEE MEDICAL ASSOCIATION HELD AT JELICO, TENN.

THURSDAY AND FRIDAY, MAY 11 AND 12, 1922.

OFFICERS.

President—Dr. W. H. Taylor, New Market, Tenn.

Vice-President for Upper East Tennessee—Dr. L. M. Scott, Jellico, Tenn.

Vice-President for Lower East Tennessee—J. R. Nankivell, Athens, Tenn.

Secretary-Treasurer—Dr. G. Victor Williams, Chattanooga, Tenn.

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Dr. J. L. Rose.

COMMITTEE ON TRANSPORTATION.

Dr. Thomas Jennings, Chairman; Dr. G. B. Brown, Dr. J. W. Presley, Dr. W. N. Jones, Dr. J. W. L. Cooper, Dr. G. M. Richmond.

The Medical Society furnishes the best means for interchange of ideas. Make every effort to attend, even at the sacrifice of a few calls. Get away from business and professional cares.

Election of officers, report of the Secretary-Treasurer, and selection of next place of meeting, will occur during the morning of the last day.

OPENING EXERCISE.

Association called to order by Dr. James L. Heffernan, Chairman Committee on Arrangements, at the Palace Theatre at 9:30 A. M., May 11, 1922.

Invocation—Rev. Willis Thompson.

Address of Welcome in behalf of the City of Jellico by Mayor J. A. Hackney.

Address of Welcome in behalf of the Campbell County Medical Society, Dr. L. M. Scott. Response.

Introduction of President W. H. Taylor, New Market, Tenn.

The meetings will be held at the Palace Theatre, beginning at 9:30 A. M., and continuing to 12:30 P. M. One hour for lunch, and

start again in the afternoon promptly at 1:30, and continue until 5:00 P. M. A banquet will be given the members by the Campbell County Medical Society at 6:30 P. M., May 11th. Night Scientific Program begins at 8:00 o'clock.

The invited guest of the Association is Dr. E. W. Bridgeman, Internist of Johns Hopkins Hospital.

SCIENTIFIC PROGRAM.

Papers will be called in order here listed. After the entire program has been called, any who have not responded will be called again.

Papers limited to twenty minutes. Discussion limited to five minutes to each member. Please observe this rule. (This does not apply to special order papers.)

PAPERS TO BE MADE SPECIAL ORDER.

Dr. W. H. Taylor, New Market, Tenn., President of the East Tennessee Medical Association. Subject: The Significance of Pain.

Dr. E. W. Bridgman, Baltimore, Md. Subject: The Effort Syndrome—Its Significance, Diagnosis and Treatment.

PAPERS BY DOCTORS.

Dr. E. C. Anderson, Chattanooga—Subject: Further Experience With the Duodenal Tube.

Dr. J. Q. A. West, Knoxville—Subject: Intestinal Ills.

Dr. E. H. Ford, Knoxville—Subject: Some Diseases of the Accessory Sinuses of the Nose.
Dr. J. R. Nankivell, Athens—Subject: Some Thoughts on Pathogeny, With Practical Deductions.

Dr. S. C. Wilson, Rockwood—Subject: Cancer of the Breast.

Dr. Dunbar Newell, Chattanooga—Subject: Trauma to the Brain and Its Membranes.

Dr. R. H. Newman, Knoxville—Subject: Milk Injection in Inflammatory Eye Conditions.

Dr. Tom R. Barry, Knoxville—Subject: Hematuria.

Dr. E. R. Zemp, Knoxville—Subject: Treatment of Rheumatic Fever.

Dr. Walter Luttrell, Knoxville—Subject: Surgery of the Prostate.

Dr. Oliver Hill, Knoxville—Subject: Some Suggestions for Feeding of Infants and Young Children.

Dr. L. L. Sheddan, Knoxville—Subject: Treatment of Acute Intestinal Obstruction.

Dr. H. C. Long, Knoxville—Subject: Infection and Resistance.

Dr. M. M. Copenhaver, Knoxville—Subject: Care of the Pregnant Woman.

Dr. J. B. Haskins, Chattanooga—Subject: The Relationship Between Toxemia of Pregnancy and Uterine Sepsis.

Dr. A. G. Kern, Knoxville—Subject: Perinephritic Abscess.

Dr. B. I. Harrison, Knoxville—Subject: The Surgical Management of Obstructive Jaundice.

Dr. S. F. Casenburg, Knoxville—Subject: A Few of the Therapeutic Indications for the Use of the Short Wave Lengths of the Spectrum.

Dr. G. B. Brown, Elk Valley—Subject: Psycho Therapeutics.

Dr. Lucius Hill, Knoxville—Subject: Breast Feeding.

Dr. C. J. Carmichael, Knoxville—Subject: History Taking.

Dr. S. H. Hodge, Knoxville—Subject: Treatment of Uterine Hemorrhage.

Dr. John T. Barbee, Knoxville—Subject: Dennett Classification of Diarrhoeas.

WEST TENNESSEE MEDICAL AND SURGICAL ASSOCIATION, TWENTY-FIRST ANNUAL MEETING.

HELD AT JACKSON, TENNESSEE,
TUESDAY AND WEDNESDAY, MAY 16-17, 1922.

INFORMATION.

Owing to the Scientific Program arranged for the meeting it required TWO WHOLE DAYS and EVENINGS to exhaust the topics.

The opening session was at 9 a. m. Tuesday the 16th, and sessions were held morning, afternoon, and evening of the two days 16th and 17th.

FIRST DAY—AFTERNOON.

Meeting adjourned at 5 p. m., automobiles

carried the members to the suburban home of Dr. Jere Crook, where an alfresco tea was served by Dr. and Mrs. Cook. Immediately afterwards, automobiles carried the members to the Country Club where dinner was served at 7 p. m., following which the Presidents' Address and the program resumed for the evening session.

Members on program were requested to note this arrangement so that if it was impossible to attend all the time, they could make choice as to the day they could best attend.

SCIENTIFIC PROGRAM.

1. Necessity of More Thorough Routine Physical Examination of Patients—By James W. McClarin M. D., Jackson.
2. Diagnosis—By R. L. Motley, M. D., Dyersburg.
3. Great Need of Antopsies—By B. T. Terry, M. D., Nashville (slides).
4. Diagnosis of Pulmonary Tuberculosis—By W. T. Swink, M. D., Memphis.
5. More Conservatism in Medicine and Surgery—By V. E. Massey, M. D., Nashville.
6. Symptomology of Mastoiditis—By John W. Moore, M. D., Nashville.
7. Things the General Practitioner Should Know About Cause and Prevention of Mastoiditis—By A. C. Lewis, M. D., Memphis.
8. Some Cases of Infantile Epilepsy Due to Hypopituaterism—By Carroll Turner M. D., Memphis.
9. Luminol in Treatment of Epilepsy—By W. R. Wallace, M. D., Memphis.
10. Technique and Results of Local Tonsilotomy—By S. M. Herron, M. D., Jackson.
11. Attending an Obstetric Case at Home—By Roy Douglass, M. D., Huntingdon.
12. Puerperal Infections—By W. P. Watson, M. D., Dyersburg.
13. Diagnosis of Extra-Uterine Pregnancy—By J. A. Crisler, M. D., Memphis.
14. Cesarean Section Report of Cases—By Jere L. Crook, M. D., Jackson.
15. Retention of Urine Due to Tumor of Bladder; Report of Case—By John E. Hall, M. D., Nashville.
16. Preliminaries of Prostatectomy—By W. A. Bryan, M. D., Nashville.
17. Supra-Pubic Prostatectomy—By Geo. R. Livermore, M. D., Memphis.
18. Surgery of the Kidney—By John R. Caulk, M. D., St. Louis, Mo.
19. Lesions of the Spinal Cord—By Elliot Royer, M. D., Chicago, (slides).
20. Case of Spinal Cord Syphilis With Cervical Meningeal Involvement—By R. C. Bunting, M. D., Memphis.
21. Report of Case—By Richard Barr, M. D., Nashville.
22. Certain Groups of Atypical Abdominal Symptoms with Relations to Essential Pathology—By J. L. McGee, M. D., Memphis, (slides).
23. Thyrotoxic Adenoma, with Remarks on Basic Metabolism—By W. D. Haggard, M. D., Nashville.
24. Injuries to the Eye from Presence of Foreign Bodies—By A. B. Dancey, M. D., Jackson.
25. Importance of Early Correction of Cross Eye Deformity—By Bruce P. Pool, M. D., Nashville.
26. Inguinal Hernia—By Robt. Mann, M. D., Memphis.
27. Treatment of Internal Hemorrhoids—By Max Henning, M. D., Memphis.
28. Cancer of the Colon—By W. C. Dixon, M. D., Nashville.
29. Carcinoma of the Stomach—By H. M. Tigert, M. D., Nashville.
30. Carcinoma of Small Intestine—By W. O. Floyd, M. D., Nashville.
31. Cancer of the Uterus. Use of Radium in Treatment—By Wm. S. Anderson, M. D., Memphis.
32. Further Experiences with Synergistic Analgesia in Major Surgery—By Frank D. Smythe, M. D., Memphis.
33. Auricular Fibrillation with Paroxysmal Tachycardia—By S. T. Rucker, M. D., Memphis.
34. Congenital Hypertrophic Stenosis of Pylorus—By J. A. Graham, M. D., Chicago, Ill.
35. Acute Dilatation of Stomach—By Casa Collier, M. D., Memphis.

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36. Some Phases in Surgical Management of Gastric Uleers—By R. L. Sanders, M. D., Memphis.
37. Interesting Case of Typhoid—By Sidney Meeker, M. D., Memphis.
38. Typhoid Perforation of Appendix—By M. Goltman, M. D., Memphis.
39. Red Degeneration of Fibroids—By John M. Maury, M. D., Memphis.
40. Treatment of Fibroids by X Ray or Radium—By W. S. Lawrence, M. D., Memphis.
41. Syphilis of Bones and Joints; Report of Cases—By Edwin W. Lipscomb, M. D., Memphis.
42. Internal Derangements of the Knee Joint—By H. G. Hill, M. D., Memphis.
43. Treatment of Compound Fractures of

Tibia; Report of Case—By W. F. Clary, M. D., Memphis.

OFFICERS.

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 J. L. Crook, M. D. Leon Williams, M. D.,
 J. T. Fields, M. D.

“Erudita parvicula res est periculosa hibe
 profunda vel gusta non fontem Pieriana”

MISCELLANEOUS

INFLUENZA WITH A DIFFERENCE.

The influenza of the past few months has been a different thing from that of the 1918-19 invasion, says the writer of an article in *The Statistical Bulletin* of the Metropolitan Life Insurance Company (New York). So far as present indications show, the age distribution of fatal cases has been conspicuously unlike that of the earlier epidemic. We read:

“In the world pandemic of 1918, the deaths were largely concentrated between the ages of 20 and 40. In the past few months the deaths have been concentrated in early life and more particularly in old age. About one-half of the deaths were those of persons over 45 years of age. In this respect they were distributed very much as pneumonia deaths generally were before the epidemic set in. This fact is an additional indication that what has transpired during the last few months has not been a recrudescence of the serious influenza epidemic of three years ago, but is something very similar to what happens every winter with the increase in influenza cases and of primary pneumonias. If the number of cases and deaths for this year has been higher than last year it is chiefly because that for last year was exceptionally low. In fact, the rate for respiratory disease this February can not be considered a high figure according to the standards of a few weeks ago. These conclusions are reached by a study of the death claims presented during four recent weeks in the cases of 1,752 decedents whose deaths were reported as due either to influenza or pneumonia. The deaths studied occurred over a wide area; in fact, almost every State and Canadian province is represented.

INTESTINAL PARASITES AS A FREQUENT CAUSE OF UNDIAGNOSED MALADIES IN CHILDREN.

The importance of considering intestinal parasites in differential diagnosis is emphasized by Allen H. Moore, New Market, Va., (*Journal A. M. A.* April 22, 1922). In one case the symptoms were typical of typhoid. Ten days after the initial onset, the patient passed an immense roundworm. Castor oil was given that night, followed the next morning with *santonin* and *calomel*. In a few hours the patient passed twenty-seven huge roundworms. There was a prompt and uneventful recovery. In the second case a diagnosis of intestinal obstruction, *intussusception*, was made, and a surgical operation advised. Operation revealed a large mass of ringworms coiled about a fecal impaction. In the third case convulsions obscured the diagnosis.

VACCINATION HISTORIES OF SMALL-POX CASES.

The following table gives the vaccination histories of smallpox patients as reported to the Public Health Service by the State health officers. This information was furnished by eight States.

The total number of cases for which the histories were given was 22,944, of which 63.5 per cent. had never been successfully vaccinated; 4.6 per cent. had been vaccinated more than 7 years preceding the attack; 1.8 per cent. had been vaccinated within 7 years of the attack; and in 30.1 per cent. of the cases the vaccination status was not obtained or was uncertain.

THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, under Direction of the Trustees

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J. F. GALLAGHER, M. D., Associate Editor

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NUMBER 2

LATERAL SINUS THROMBOSIS COMPLICATING MASTOIDITIS.*

BY W. G. KENNON, M. D., NASHVILLE, TENN.

LATERAL sinus thrombosis as a complication of mastoiditis presents to the Otologist probably the most spectacular condition with which he has to deal. It is to Otology, what the Caesarian section is to the obstetrician, an opportunity for spectacular surgery in the presence of urgent necessity.

Presenting as it does in most cases a most **impressive** and desperate clinical picture, lateral sinus thrombosis gives to the Otologist one of those chances to make a grandstand play with a great chance of success, which in this case means the saving, not of a game, but of a life.

How frequently cases of sinus thrombosis occur in relation to mastoiditis, is hard to determine but from statistics by various authors, over a period of several years and embracing several thousand cases, it seems the percentage varies from three to six of all cases of mastoiditis. The condition is probably more frequent in chronic than in acute cases, though the number of cases reported is about the same for the two classes. When we consider, however, the greater number of acute mastoids which come to operation, we are forced to the conclusion that the chronic cases have the higher proportion of the complication.

Branu states in a paper on "Pathology of the Mastoid," that thrombosis of the lateral

sinus, resulting from the middle ear and mastoid disease, may occur from any one of three conditions.

The 1st, the inner table over the sinus may be diseased and perisinus abscess formed between this and the sinus wall. This results in an inflammation of the sinus wall and eventually leads to thrombus formation.

The 2nd, the disease may be transferred from a diseased inner table to the sinus wall without perisinus abscess formation.

The 3rd, a thrombosis may form in one of the smaller mastoid veins and extend into the sinus.

Branu found that the recent thrombi contained but few, if any, bacteria. This indicates probably that at first the thrombotic process is merely a chemical affair and that only later occurs the invasion of the thrombus and the blood stream by the pathogenic organisms.

Thrombi may be either parietal or obliterating. Probably all of them are at first parietal, becoming obliterating after a variable length of time.

The underlying causes of sinus thrombosis are probably, in the main, dependent on factors whose variability are too great to be of any value in giving us any information of diagnostic or prognostic value.

Statements such as their dependence on the virulence of the organism, resistances of the individual, delayed or incomplete mastoid operation, mean less than nothing when we are confronted by a condition which in its very nature demands, not theorization, but action.

*Read before the Section on Ophthalmology and Oto-laryngology of the Tennessee State Medical Association. Memphis, April 11, 12, and 13, 1922.

Unquestionably incomplete and delayed operation are factors. We all delay operations, not because we wish to do so, but because we fail to make an early diagnosis, and who of us has failed to find that his operation was incomplete, when he has to go back in order to operate on the sinus. We usually find that we have failed to remove some cells far back over the sinus or that we have failed to uncover the dura over an area which is the seat of our perisinus abscess, which was the underlying, fundamental cause of the thrombus. It is always true that our hindsight is better than our foresight and if we had suspected a peri-sinus abscess before operation we should have made the search for it before we were forced to operate again by manifestations of grave sepsis.

The clinical picture which sinus thrombosis presents varies greatly. Signs which when present are diagnostic, have no negative value. In typical cases the diagnosis is usually easy, but not all cases are typical. When we have a septic chart with a temperature range from normal or below, to 105° or above, the diagnosis is almost made for us, providing we have ruled out other conditions which may do this, the only one of importance being malaria. McKernon considers the temperature the most important symptom and I thoroughly agree with this opinion. Chills are frequent, but by no means constant. The pulse and respiration are proportionate with the temperature. If the pulse rate is low, we must consider other intracranial trouble. The neck may be tender over the jugular and we may have a cord-like thickening along the jugular. Both these signs are rare. Not uncommonly we have a certain amount of optic neuritis which may even go on to well developed choked disc. This, when found, is a valuable symptom and in my experience it has occurred in about one-fourth of the cases.

The leucocyte count runs high but not as high as in conditions like pneumonia, 15,000 to 20,000 being about the limit with a polymorpho-nuclear count of about 80%. A positive blood culture is, according to most authorities, absolutely diagnostic and, according to Libman, occurs in all cases at some period in their course. The value of blood culture is therefore very great when positive, but when negative means nothing. The time of taking

the culture is of great importance and there is, of course, also the element of luck. According to Dwyer, he found the greatest number of organisms present during the period of high temperature. From this observation it would seem that the culture should be taken when the temperature is on the incline, rather than the decline.

The possible terminations of the thrombotic process are according to Braun.

1. Death from the general sepsis before the clot breaks down.
2. The clot breaks down in the center and erodes the sinus wall and communicates with the peri-sinus abscess.
3. The pus in the sinus breaks through into the brain and forms a cerebellar abscess.
4. The thrombus organizes and the sinus is obliterated.
5. The thrombus resorbs partially or completely and the sinus is therefore restored.

During the course of mastoid operation, previous to which the patient has had any unusually high temperature, it is always wise to uncover the sinus fairly thoroughly and investigate the conditions there found. If a perisinus abscess is found then the sinus should be uncovered as far as necessary in order to reach healthy sinus wall. The sinus should also be investigated as to its patency by compressing and milking out the blood, allowing the blood to return from above and below alternately after the method first advocated by Whiting.

If it seems under these conditions that the interior of the sinus is not diseased nothing further should be done in the way of interference, unless we have, prior to operation, definitely decided that sinus thrombosis exists. If we have a case of sinus thrombosis, what method shall we elect in the surgical treatment of the condition?

The advocates of ligation and the advocates of resection each claim that their method should be chosen. Certainly the advocates of ligation have in their favor the much easier procedure with less shock and less post-operative scarring. The advocates of resection of the vein make the claim of a higher percentage of cures, but when we analyze the pub-

lished results, the two schools are about on an even basis, as far as results are concerned. Then there is a third class of men who do not believe in any interference whatever with the vein, providing that they are able to satisfy themselves that they have evacuated all the thrombus in the sinus and secured free bleeding from each end. All operators believe in the opening and obliteration of the sinus, endeavoring to remove all the infected clot by removing the parietal wall of the sinus, as far as the clot extends, or by opening the sinus and curetting upward and downward until free bleeding is secured from both the Torcular and bulbar direction if it be possible to do this.

The question of whether to ligate prior to operation on the sinus or not, is a question upon which every surgeon has his own opinion. It seems to me that if our diagnosis is established and we are of the school which believes in surgical treatment of the vein, then the ligation or resection should be done prior to the opening sinus. The danger of dislodged clots which is real, and the danger of air embolism which is more or less fanciful, being thereby avoided.

The differential diagnosis from various conditions is often a difficult problem. When, during the course of mastoiditis or after operation, we have the characteristic temperature chart with the remissions and exacerbations, we must promptly get busy in our differentiation. Blood first, both the count and culture. Then a general and physical examination. These two procedures will usually be what is necessary to prevent any mistakes. Malaria should always be looked for in any patient, but particular care should be exercised where malaria is prevalent.

Another complication of mastoiditis which may give very much the same sort of temperature chart as does sinus thrombosis, is erysipelas. I cannot make it too strong when I say erysipelas is not infrequently several days late in its skin manifestations. I have seen two such cases that I recall, in one of which I had the misfortune to be the House Surgeon who opened the sinus and resected the vein in spite of a negative blood culture at the end of 48 hours. We operated, and at the end of 72 hours had a well developed case of ery-

sipelas. Fortunately the patient recovered, but it was in spite of, rather than because of, good surgery. In looking up the subject of this paper, I have found where several other men have made the same mistake, so I do not feel as lonesome as I would have otherwise felt.

If operation on these cases is carried out early before the thrombus has begun to soften the particles are carried off in the blood stream to form septic emboli elsewhere in the body the prognosis is fairly good, the mortality being probably below 10%. If however operation is delayed too long the prognosis becomes rapidly worse and our patient will die a septicaemic or pyaemic death, than which there is no more depressing picture.

Any post-operative case in which at the time of the operation the sinus appeared diseased or in which the sinus was not exposed and which runs a septic temperature which cannot be otherwise explained, must be strongly suspected of harboring a sinus thrombosis.

If such a case carries a persistently high leucocyte count even in the absence of positive blood culture, it is my opinion that the sinus should be explored and if the conditions found justify it, the jugular should be ligated or resected and the sinus opened and if found thrombosed the clot should be evacuated.

In conclusion I wish to emphasize the fact that our most valuable single symptom is recorded by the temperature chart and he who operates without this diagnostic aid, unless the other signs are absolutely positive, is one of those who, according to Alexander Pope, rush in where angels fear to tread.

DISCUSSION.

Dr. W. W. POTTER, Knoxville.—I listened to the Doctor's paper with a very close attention, and I was unable to find anything in this paper which I could criticize. He has given us, in a short, concise paper, I think, the opinion of most all of us relative to this condition. The only good thing about the lateral sinus thrombosis is the fact that it is relatively rare. That is a fortunate thing, I am convinced. It is more rare, or rarer, than it was formerly I believe, for the same reason that our mastoid

operations here are not so frequently done as formerly, from the simple fact that all these acute conditions or even the chronic conditions, for that matter, are handled more intelligently and treated in a better way. The percentage of cases following mastoiditis, he says, is from three to six per cent of lateral sinus thrombosis in your practice.

There is no question about these being operated on; they must be, as he has said in his paper. The symptoms leading up to the operation should be considered, and he has very clearly said what these symptoms were, namely: high blood count, pulse along about 80; high temperature, varying, temperature chart varying from even below normal on up to 105. That is a suspicious thing in any case, whether a patient has been operated on for a mastoiditis, or whether he has a chill, not necessarily present, those patients do not always have a chill; sometimes, of course, they do.

I personally do not have much sympathy for the fellow who is operating and feels justified in going into the sinus without ligating that jugular; I think that is a bad policy; I think it should be ligated; whether or not you respect it is a question. Personally I do not feel that that is necessary. I think that ligation is the important thing; but the clearing out of the sinus is of course the most important thing. The Doctor's paper has left very little to be said regarding this condition. He has summed this condition up in a short, concise way, and there is nothing of interest that I could add to it in the way of discussion, other than to just emphasize a few of the things that he has said.

HERSCHEL EZELL, M. D., Nashville.—Mr. President and gentlemen: Dr. Kennon has given us an excellent paper, and I am like Dr. Potter, there is very little criticism to be offered.

It seems to me, in fact I am sure, that all important thing in cases of this character is the diagnosis. It is easy to handle the case, if the diagnosis is made, and it should be made early.

Dr. Kennon emphasized the temperature chart, which is straight up and down, of 4 to 5 degrees elevation descension. This is the rule in the majority of cases; however it does not apply to children. Loeb says that children will have this flighty temperature chart, with or without sinus thrombosis, and it seems to me that this makes the diagnosis more complicated and less apt to be made correctly. In such cases, of course, we will have to depend upon the other symptoms that were described very carefully by Dr. Kennon. Therefore, I have come to the conclusion that we are likely to be mistaken, and pass up some cases of lateral sinus thrombosis in children.

The treatment of lateral sinus thrombosis the profession seems to be divided upon. However, again quoting Loeb, "the majority of the men prefer ligation," and it seems to me that this is the safest method of handling these cases.

P. M. FARRINGTON, M. D., Memphis.—The care of these cases is of course a very serious matter even when they are not complicated. We have difficulty in deciding what is best to be done. I recall a few weeks ago an unresolved double lobar pneumonia, a septic temperature of 105 or more and rigors for four or five days. The case came under observation in that desperate condition. There was an irritation about the right eye, a mastoiditis well developed on the right side, a drooping membranous canal, a discharge of three weeks standing. The spinal fluid was clear. We had a high blood count. The diagnosis as to general physical condition was furnished by a good internist. An oculist who saw the eye could not make out the fundus because of cloudy vitreous and feared beginning sepsis. The question in a complicated case of this kind was of course, how little to do, not how much to do. We decided to open the mastoid and to drain freely. This we did, finding the bone over the sinus hard and firm and clear. The sinus was not exposed. Dr. Ellett took charge of the eye, and a day or two later drained the orbit, finding pus above the globe. The rigors became less severe, the temperature went down, but all of us questioned whether or not we were dealing with a sinus thrombosis in this case and what to do in the matter. It developed that the sinus was clean and the patient fortunately cleared up with the loss of vision of the right eye.

It may be that others have met with sinus cases having the complications mentioned in the case just reported and I trust if this is true we may have some discussion of them.

GEORGE H. PRICE, M. D., Nashville.—What did you do about anesthesia in that case?

DR. FARRINGTON.—Morphine and light gas anesthesia.

A. C. LEWIS, M. D., Memphis, Tenn.—Mr. Chairman and Gentlemen: During the fifteen years of my practice in Otology only two blots appear upon my record. Both are deaths caused by lateral sinus thrombosis. Neither case developed under my observation but were brought to the hospital from the country in that condition. One was in a comatose state (practically a dying condition) when admitted to the hospital. I operated on her that night, doing

a jugular resection an opening up the sinus widely. She was conscious next morning but died later in the day.

The other patient had been having rigors for ten days or more when she was brought in. We handled her in the same way, resecting the jugular and clearing out the sinus, but she died from septicemia a week later.

The cases of this kind we see, I think usually come from away back in the rural districts and are due to neglect. Ignorance on the part of the patient and their family cause them to delay and procrastinate until life is in jeopardy or it is too late.

I have not seen, or known of any case occurring in chronic purulent otitis media.

I had hoped that Dr. Kennon had some new and effective treatment that we had not heard about for sinus thrombosis in its late stages. The prophylactic treatment is of primary importance. After the development of the disease when the surgical treatment is completed there is little else we can do.

HILLIARD WOOD, M. D., Nashville.—As Dr. Kennon says, these cases are not only very serious, but often very dramatic. I wish to discuss for a few moments the diagnosis of intra-sinus pathology. To begin with, I do not believe it is possible to be always correct in the diagnosis of an intra-sinus condition without opening the sinus. The presence of carious bone overlying the sinus is no proof of a sinus thrombosis, for we often meet it in simple acute mastoiditis, without sinus trouble or symptoms. The presence of granulation tissue covering the sinuous wall, while it may be present in sinus thrombosis, is yet no proof of sinus involvement, for we often meet with it without sinus thrombosis. Aspirating the sinus with a Luer hypodermic syringe after it is exposed may or may not give us evidence. For example, having exposed the sinus, if we aspirate it with a hypodermic syringe, and get pus, we certainly know that we have a sinus thrombosis, for, as the author of the paper stated, the thrombosis, in its beginning is usually limited to the wall, and only later does the lumen of the sinus become obstructed; so that with a partial thrombus we may still have a current of blood going through the unobstructed or only partially obstructed sinus, and get the blood out even with a thrombus. Of course in those delayed cases, as we have all seen occasionally, where the sinus has already ruptured, and when the bone is removed from over it and pus oozes out of a sinus, the diagnosis is already made. I know of but one way of proving that there is pathology in a sinus, and that is by opening the sinus and seeing the pathology. That means an incision of such length as you please to make it, along the wall of the sinus, parallel with its course. Such an incision, I believe, should always be preceded by ligation of the internal jugular vein. I may be a little enthusiastic about the virtue of ligations of the internal jugular vein in mastoid cases accom-

panied by more or less symptoms of sinus thrombosis, but I have seen in a few cases such happy results following ligation, when, to my way of thinking, the results could not have followed anything else I did except the ligation, that I have come to regard the ligation of the internal jugular very highly. It certainly cuts off the entrance of infection from the mastoid into the general circulation to a very great extent,—in the main it does—and I regard it as a measure that should not only be used in cases of actual sinus thrombosis, but perhaps used in cases of strongly suspected sinus thrombosis. I thank you.

DR. CHAS. D. BLASSINGAME, Memphis.—Just a point in the differential diagnosis of lateral sinus thrombosis, after the sinus is exposed at operation. About ten days ago I was doing an acute mastoid, the accessory cells of which, filled with pus, extended over the lateral sinus and reached some distance behind and below it. When, as I thought, all pathology had been removed, a small amount of pus appeared in the lowermost cell below the lateral sinus ridge. Uncovering the sinus at this point, a large quantity of pus flowed from around the sinus. Continuing the operation downward in the direction of the sinus, I went into a large cavity filled with soft necrotic material, which I at first thought was a disintegrating thrombus of the sinus. After uncovering and compressing the sinus above, I curetted out all the necrotic material and found that it was necrosed bone, which covered the sinus after it makes its sharp turn inward and downward together with some necrosis of soft tissue at the base of the skull at that point. This would have terminated in the Benzold type of mastoid. This type of mastoid, as I found in this case, can sometimes be confused with a lateral sinus thrombosis.

DR. GEORGE E. SHAMBAUGH, Chicago.—Mr. Chairman and Gentlemen: All of us who handle ear troubles appreciate that a sinus thrombosis is one of the most serious complications that occurs in suppurative ear diseases. Ordinarily, the diagnosis presents no great difficulties because symptoms are so characteristic, but as has been brought out in the discussion, this is not always the case; the diagnosis cannot always be made from clinical symptoms. One can easily be led astray especially in children by interpreting marked fluctuations in temperature as an indication of sinus thrombosis. In these cases, especially, one becomes conservative about making a diagnosis from the high temperature as an indication of sinus thrombosis. In these cases, especially, one becomes conservative about making a diagnosis from the high temperature or from the increased leucocyte count, the latter being

usually present with a fluctuating temperature. There are several things about thrombosis that one should keep in mind. The first is the mere fact that a vein is involved is not in itself an indication that the situation cannot get along without an operation on the vein. This we see in the thrombus occurring after childbirth and undoubtedly occurs much more frequently than we know of in connection with suppurative otitis media. Another point to keep in mind is that the occurrence of a high temperature must not be interpreted too quickly as an indication of a sinus involvement. A pneumonia begins about the same way. Many cases with the typical symptoms of beginning sinus thrombosis get well without operating upon the sinus provided the disease about the sinus is properly taken care of. In many of these cases there is undoubtedly a thrombosis forming in the sinus which, however, takes care of itself after the perisinus infection is drained. It seems to me that otologists are likely to adopt the most radical measures of all cases of sinus thrombosis, hoping thereby to make sure that they are doing enough. I am inclined to think that the danger of doing too much may be as great as the danger of not doing enough. For example, take a case of acute otitis media with a child with high temperature and then a quick remission, one interprets these symptoms as resulting from some sinus involvement. Instead of proceeding with the ligation of the vein the opening of the sinus, I think, it much better to clean out the mastoid and if the sinus appears normal leave it alone. In the majority of cases of this type nothing further is required. Should there be a history of recurring chills with remissions after the mastoid has been cleaned out one could proceed with the exploration of the sinus. If on aspirating, blood is withdrawn, I would be inclined to leave the condition alone in spite of the fact that a parietal thrombus may in this way be overlooked. A parietal thrombus will usually take care of itself provided the perisinus disease is eliminated. If on aspirating, the sinus is found to be blocked, I still think is questionable whether the ligation of the vein need be necessarily undertaken. Where the aspirating needle draws no pus from the sinus, in these cases only am I inclined to ligate the vein before cleaning out the sinus. In other cases I do not ligate, but remove if possible the clot from the upper end until bleeding occurs. I am not so particular about the lower end. I have followed at different times both measures, that of ligating the vein in all cases before opening the sinus and the conservative method outlined above and am better pleased with the latter method.

DR. GEO. H. PRICE, Nashville.—You have found those cases in which the sinus was obliterated at the time of operation, haven't you?

DR. SHAMBAUGH.—You mean obliterated by a thrombus?

DR. PRICE.—Yes, I mean where the sinus had been obliterated by the thrombus, when the sinus was nothing but a cord.

DR. SHAMBAUGH.—You mean no tissue in the sinus at all?

DR. PRICE.—None at all.

DR. SHAMBAUGH.—I don't know that I have seen that particular thing. Where is the thrombus that obliterates it?

DR. PRICE.—It is gone, absorbed.

DR. KENNON, closing discussion.—Dr. Potter mentioned the fact that he did not believe that lateral thrombosis occurred in three to six per cent. I did not believe it myself until I went over the cases I had operated on; I found out I had had four per cent in my private practice, and in looking up the literature I found out that Downing, of Baltimore, makes a report in which he has three per cent, something like four cases out of 95; and another article, I have forgotten by whom, reported the cases in the Massachusetts Charity Eye and Ear, and the New Eye and Ear, over a period of ten years, and the proportion was three and a half to four and a half per cent, I have forgotten just which, or which institution reports which.

There is one thing which I hoped somebody would bring up that has always impressed me in cases of lateral sinus thrombosis, and that is the remarkable feeling of well being that many of these patients have. They are the most cheerful patients you have. You go in and ask the patient, "how are you feeling?" looking at a chart taken ten minutes before, 105 or 106, he says "I am feeling fine, Doctor, except I am hot." That is all he has to say for himself. That feeling of well-being, I think, is remarkable in the number of cases that I have seen.

Dr. Shambaugh stressed a point that interested me a great deal, and that is the results of opening up your sinus and doing nothing to your vein. The men that have done that have gotten just as good and better results than the men who have ligated or have resected.

The temperature chart, as I say, and I still maintain, is the most important single symptom which we have in this condition. The temperature chart in children, in any condition, is always regarded as being unreliable, because children react so much more violently to any sort of stimulation, one might say; but the temperature chart is, after all, really our most reliable symptom. If you get your temperature chart and one other diagnostic sign in these cases, you feel that if the patient is not doing well you are justified in operating; but if you get one other, diagnostic signs in these cases, you feel that if the patient is not doing well you are justified in operating; but if you get one other, or two other diagnostic sort of propositions and do not have your temperature chart, you are doubtful about operating.

Dr. Farrington's case was an interesting one, from every standpoint. What one would have said when he first saw that patient, diagnostically, or prognostically, I should have said, was, that the patient was, as we say in my part of the country, in the middle of a bad fix, but he got through very well, I think, under the circumstances. If he had been my case I would not have given him any anesthetic at all; I might have done it under local anesthesia. I have done two cases of mastoid under local anesthetics, when we had a bad heart lesion, and we had very little trouble in doing a complete mastoid.

Dr. Lewis mentioned the fact that he had not seen any lateral sinus thrombosis in chronic cases. They do occur in chronic cases probably a little more frequently than in acute cases. Another thing about the chronic cases is they offer a distinctly worse prognosis. Lateral sinus thrombosis complicating a chronic mastoiditis is more liable to die than your patient with lateral sinus thrombosis complicating acute cases.

Dr. Wood is entirely right in saying you cannot be sure you have a lateral sinus thrombosis until the sinus is opened. You cannot see in there, and if you stick a needle in there your thrombus may be below or above where you stick your needle in; it may be a parietal thrombus, it may be so short your needle would go all the way through it, and you would get only blood. Of course if you get pus, the diagnosis is obvious.

Dr. Shambaugh's statement in regard to his treatment, or his procedure—lack of treatment, in cases which presented a temperature chart of sinus thrombosis, by simply uncovering the lateral sinus, and if he did not think there was a definite obliteration of the sinus, in allowing that patient to go ahead without any further operative procedure, to my mind, is the correct one.

Unquestionably I think at first that your thrombosis is chemical, that is, it is not necessary that we have organisms inside of that vein in order that the

patient may have a thrombus formed. The thrombus forms, and then the organisms get into it, and then we have an infected thrombus. The thrombus is at first probably not infected, and secondarily becomes so. If we can operate on that patient before his thrombus gets infected, remove the pus, under pressure around that sinus, or in that region, and allow free drainage, there is no more reason why that patient should not get well than when he gets a traumatic thrombus in a vein from any sort of an injury. Of course, if your infection travels upward toward the brain, it is more dangerous than if it travels downward; and yet if your infection does travel downward, it presents a very grave picture and mighty distressing death ensues. Any of you who have seen one of these cases die with pyaemic abscesses all over the body have seen a picture that you hope never to see again, in this world or the next.

I do not believe that one is justified, where they have been unable to evacuate all the thrombus by opening up the thrombus by going down and opening the jugular bulb. I think that is poor surgery, because you subject your patient to a very severe procedure with probable certainty, in most hands, of injury to the facial nerve, and consequent subsequent deformity, even if your patient gets well, and the operation is rather tedious and difficult, and subjects your patient in my opinion, to unnecessary shock; but if you have that infection there, if you ligate the vein, nature will usually take care of it, if you have gotten rid of the prime source.

Dr. Price's question as to the cases in which he found a cord like sinus, I think unquestionably is simply the organization of the thrombus and the obliteration of the sinus that are mentioned by Braun in his paper on the pathology of the mastoid. McKernan reports two cases of unquestioned lateral sinus thrombosis, with the temperature chart and positive blood culture and everything else, that refused operation, and in spite of all these facts, got well.

THE MANAGEMENT OF INFECTIOUS DIARRHOEA.*

BY OWEN H. WILSON, M. D., NASHVILLE, TENN.

THE literature of this subject is peculiarly unsatisfactory, due probably to the varying intensity of the infection in different parts of the country. In Eastern clinics and in current articles, cases are called diarrhoea with four to ten stools daily, while we fre-

quently see twenty to forty, or even more. The majority of our severe cases are in the second year, while in the East younger babies seem more often affected. Nearly all text books written in the East refer to withdrawing the milk for one or two days. In ordinarily severe types with us it is oftener one or two weeks before milk feedings can be safely resumed. From these observations it appears

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that we have our own peculiar problem to solve.

Infectious diarrhoea in Tennessee is responsible for at least a thousand deaths annually, besides weakening the resistance and permanently crippling the digestive power of thousands of others who manage to weather the storm. Yet this is to a large extent a preventable disease, and it rests upon us to educate mothers in methods of prevention. A visit to a baby at any time, regardless of the immediate pathology, should be the occasion of a few minutes talk on diet with a view of averting expected troubles at the onset of hot weather. I cannot refrain from mentioning some of the cardinal principles in prevention.

(1) Make use of every available drop of good breast milk with its wonderful nutritive and immunizing power.

(2) Use the best available cow's milk. Always boil it, especially in the summer, and see that the formula is correctly adjusted so that there are no signs of indigestion. Especially guard against high fats in hot weather. Do not be satisfied with an unbalanced patent food ration.

(3) Allow no fruits or green vegetables to babies under three years of age in the summer. To supply freshness use fruit juices and vegetable extracts, as strained soups.

(4) Teach mothers to regard all diarrhoeal conditions as serious. It is much easier to correct them today than tomorrow. Begin early and prevent severe cases.

For practical purposes we will discuss the disease in three stages: toxic, inflammatory and recuperative.

(1) In the toxic stage, toxic symptoms, due to fermenting food in the intestinal canal, predominate. There are high fever, intense nervousness, probably convulsions and even death. These are chiefly due to fermentation of food within the intestinal tract in addition to the beginning infection. This stage persists one or two days until the cleansing of the bowel is accomplished.

(2) Inflammatory stage. There is now less fever, less nervousness, but more tenesmus, with blood and mucous stools. This lasts from one to two weeks, possibly even longer.

(3) The recuperative stage, when there is a gradual recession of all symptoms, the stools approaching normal in number and character.

TREATMENT.

When confronted with a case of diarrhoea the first step is to place it in the stage to which it belongs. The treatment will be discussed under three heads, mechanical, drug and dietetic.

TOXIC STAGE.

In the toxic stage the indications are elimination and sedation.

(1) Mechanically the stomach should be washed unless vomiting and starvation insure this organ being empty.

For the purpose of assisting elimination every case should have at least one preliminary colon irrigation. If the fever is very high use cool not cold water. Prolonged baths are beneficial in reducing temperature and quieting nervousness.

(2) Drugs.—To cleanse the bowels a purgative is here indicated. Castor oil is quick, but calomel is easier to retain and especially thorough in cleansing the upper bowel. I prefer giving it in a single dose.

In the entire course of the disease purgatives are only indicated when there is fermenting food in the tract. The so-called healing power of a purgative is conspicuous by its absence. A liver action simply means that the intestine is cleansed, and bile, unmixed with food products, is seen in the stool.

In this stage it is sometimes necessary to use sedatives to prevent convulsions. Morphine by hypodermic injections is undoubtedly the best, but chloral or bromide may be satisfactory. Use luminal if the convulsive state is persistent.

(3) Dietetic.—During the short toxic stage no food is necessary. Even if given it only feeds the fermentive process. If the patient is very weak, alcohol in some diluted form may be used as a non-fermenting calory supply.

Water is the diet in this stage. It is essential for the purpose of diluting the toxins, promoting elimination, and counteracting the excessive fluid drain by diarrhoea, vomiting and the febrile processes. One quart

in twenty-four hours is the allowance for a year-old child. If not taken voluntarily, it must be given by forced feeding, intraperitoneally, under the skin, or intravenously.

INFLAMMATORY STAGE.

After the purgative the temperature and nervous symptoms somewhat subside, and the case takes on inflammatory characteristics, pain and tenesmus with numerous bloody mucous stools. These symptoms are produced by the action of the infecting germ in the intestinal mucosa.

(1) Mechanically, little can be done in the average case. Colon flushing is indicated to reduce tenesmus. In about half the cases it is successful; in others it even increases the symptoms. Try it out and see the effects. Murphy drip may aid in supplying fluid. Sometimes it is quite successful in spite of the diarrhoea. Baths are useful to reduce nervousness or fever if necessary. If the fluid supply cannot be otherwise maintained, it may be necessary to resort to the use of water, intraperitoneally, under the skin, or intravenously.

(2) Drugs.—Often we have been cheered by the announcement of some drug which will work wonders in the correction of this stage of diarrhoea only to be disillusioned after a few unsuccessful trials.

I feel safe in saying that in this stage no drug seems to have curative power. Even the old standby, bismuth, is worthless, sometimes even harmful, besides obscuring the proper inspection of stools. Antiseptics are worthless. All we can do is to watch symptoms and treat them as they arise. Purgatives are especially contra-indicated as they increase the intestinal irritation. Morphine in some form is useful to quiet pain and give rest, not primarily to reduce the number of stools. Benzyl Benzoate, a newer remedy, may have the same effect.

In this almost starvation stage the child is living on its own fat. Excessive fat metabolism is probably productive of acidosis, a condition harder to cure than to prevent. In anticipation give one-half to one teaspoon full of sodium bicarbonate daily.

(3) Dietetic.—It is impossible, probably undesirable, to render the intestinal tract sterile. Intestinal antiseptics could not be expected to have a selective action on the invading pathogenic germs. The only way to change the flora of the intestines is to change the culture medium, that is the intestinal contents.

In this stage, digestion has stopped. Food given only adds fuel to the fire by feeding the invading germs—not the patient. Yet “Bold Starvation,” so strongly urged by Holt a few years ago, fills the intestinal tract with the secretions of the intestinal glands—proteid in character, which offer a fertile culture medium for the growth of the infection, increasing its toxicity. Clinically, at least in this section, it has been found more satisfactory to fill the intestine with a starchy emulsion—cereal waters—in which, while the germs continue to thrive, the end products of their growth are less toxic. It is also probable that the starch thus given has a soothing effect as a colloidal application to the inflamed intestinal mucosa.

In rare cases where the invading germ happens to be the Gas Bacillus, the administration of starch is followed by fermentation, formation of gas and increased temperature. When this occurs, stop cereal waters and give only egg albumen water and animal broths, as this germ does not thrive in a proteid medium.

In giving cereal water we must be sure that at least a quart is taken in twenty-four hours in order to keep up the baby's fluid supply. If barley water is disliked, other cereal waters may be tried or some flavoring may be used. A tablespoon of fruit juice, or even tea or coffee, to eight ounces may make it pal-

atable. Fruit juice in small quantities seems harmless even with the diarrhoea. If the quart of fluid is not taken, it must be forced or given mechanically.

If it is a gas bacillus infection, give a quart of broth or albumen water. In this infection alone the Bulgara cultures do good, as this germ is inimical to the growth of the gas bacillus. This explains the apparent uselessness of the culture in the great majority of cases though now and then it seems to have a wonderful effect.

It must be emphasized that during this long inflammatory stage there is practically no digestive power in severe cases. Attempts to give milk only aggravate the symptoms by fermentation and cause reversion to the toxic stage necessitating the unfortunate use of a purgative increasing peristalsis and intestinal irritation. Even small quantities of sugar are often not digested and may cause an increased number of stools. Saccharin should then be used to sweeten.

RECUPERATIVE STAGE.

This begins when the stools become less frequent, more normal, containing digested starch, a brownish mass, though there is still still some white, thick purulent mucus. The temperature approaches normal, appetite returns and food begins to feed.

(1) Mechanically little can be done. Astringent regulations may do some good.

(2) Drugs are of little use. Tonics are not often necessary.

(3) Food now ceases to be a culture medium and is really assimilated, and milk is the only food. As soon as it is digested, improvement is rapid. But if given too early it causes a relapse. In my opinion in the whole range of medicine there is not a better opportunity to display good judgment than in determining the proper time to begin milk. If too early it is a poison; if too late the patient starves. Sad experience, which I am sure you, too, have shared in, has shown that

at least in this climate milk cannot be safely resumed on the second or third day as the textbooks recommend. It is oftener the second or third week, and then with fear and trembling. In the beginning, a low fat, low sugar, well diluted, boiled milk is best. Start with skimmed boiled milk one-fourth, barley water three-fourths, using saccharin to sweeten. Try one feeding a day, gradually increasing the frequency and strength, carefully watching the stools and temperature for signs of indigestion. Butter milk is often quite satisfactory. It is low in fat and sugar, the proteid has been coagulated and mechanically broken up, and it contains almost a pure culture of friendly bacilli.

The mortality in this disease is either from toxemia in the first stage, or from exhaustion in the long starvation period before milk can be given, and anything which will shorten this stage will materially reduce the death rate. Diluted human milk may be used very much earlier than cow's milk. Even if undigested, the toxic effects seem much less severe. It can be used at the first appearance of improvement in the stools and temperature. It is a lifesaver and should be used in every case. After a few days, one feeding of cow's milk may be given and the baby gradually weaned on to it.

The following complications may be seen in the course of infectious diarrhoea. They are important but time prevents my discussing them; relapses, vomiting, acidosis, dehydration, pyelitis, oedema and prolapsus ani.

In conclusion may I emphasize the following points:

(1) The importance of promptness in dealing with digestive disorders in susceptible babies.

(2) The use and abuse of purgatives.

(3) The discriminating use of opiates.

(4) The necessity of keeping up the water supply.

(5) The indications for the use of human milk.

DIAGRAM OF THE MANAGEMENT OF INFECTIONS DIARRHOEA.

I. TOXIC 1 to 2 days.	STIMULATION ELIMINATION SEDATIVE	MECHANICAL—Gastric Lavage—Colon flushing—Baths. DRUGS—Purgative—Morphine—Chloral— Atropine—Luminal—Camphor. DIET—Water—Diluted alcohol.
	WATCHFUL WAITING	MECHANICAL—Colon flushing—Murphy Drip—Fluids, Intraperitoneal, Under the Skin, Intravenous. DRUGS—Morphine—Atropine—Benzyl, Ben- zoate—Soda—B. B. Culture. DIET—One quart Cereal Gruel—Albumen Water and Broths.
	MILK	MECHANICAL—Astringent Irrigations. DRUGS.—Tonics. DIET—Human Milk—Butter Milk—Low Fat Low Sugar—Boiled Milk.
II. INFLAMMATORY 1 to 3 weeks.		
III. RECUPERATIVE		

FURTHER EXPERIENCE WITH SYNERGISTIC ANALGESIA.*

BY DR. FRANK SMYTHE, F. A. C. S., MEMPHIS.

THERE is some risk attending the administration of any general anaesthetic, and it is our duty to those whom we serve, and upon whom we are called to operate, where a general anaesthetic is required, to select one who is qualified by proper training and experience to administer the anaesthetic. From an experience of twenty years as a surgeon I am of the opinion that ether is the safest agent that can be employed as an anaesthetic, provided the one who is administering the ether has had no practical training in the art of administering anaesthetics. Chloroform, owing to the fact that there is no line of demarkation between a therapeutic and a toxic dose, should rarely, if ever be administered as a matter of choice.

Nitrous oxide is the safest and most satisfactory inhalation anaesthetic that can be employed, certainly the safest where its administration is preceded by the giving of one or more synergistic drugs, plus the use of novocain locally, if administered by an expert; one

experienced in the administration of gas-oxygen, and not a half-baked or made-over-night specialist in anaesthetics. For the past three years all of the surgery done by myself and co-workers, with the exception of an occasional case out of the city, has been done under gas-oxygen, preceded by morphine sulphate one quarter of a grain and atropine sulphate one one-hundred-and-fiftieth of a grain, given 45 minutes before beginning the administration of the gas-oxygen. For eight months we have given in addition to the morphine and atropine a solution of magnesium sulphate 4%, from 200 to 400cc subcutaneously, with three-eighths of a grain of morphine sulphate dissolved in 6cc of a 25% solution of magnesium sulphate; the latter divided into three doses and given at intervals of 20 minutes; the first dose be given one and one-half hours before time set for the operation. Atropine sulphate is administered with the second dose of morphine. Herman Gwathmey's method.

The report which I now submit is supplemental to the report submitted upon this subject and read before the Tri-State Medical Society, at its meeting last November and pub-

*Read before the West Tennessee Medical and Surgical Association, Jackson, Tenn., May 18, 1922.

lished in the Memphis Medical Monthly for October of that year. The object that I had in mind was to determine from personal experience whether or not the benefits accruing to the patient from the administration of magnesium sulphate as per the Gwathney technique would prove of sufficient value to warrant me in adopting it as a routine and to report to the Profession the result of my experience; and for the additional purpose of determining if there was much, if any, difference in the post-operative progress of major cases operated upon where the patient had been given from 200 to 400cc of a 4% solution of magnesium sulphate plus the 6cc of a 25% solution of magnesium sulphate divided into three parts, each part containing one-eighth of a grain of morphine sulphate, administered at 20 minute intervals, beginning one and one-half hours before time set for operation, with the second dose 1/150 of a grain if atropine is added; and in cases where the magnesium sulphate by hypondermoeclysis was omitted.

In compiling the results of our experience where morphine sulphate and atropine sulphate only had been used prior to administration of the anesthetic we have selected fifty cases—some of the cases operated upon by ourselves; but the majority of cases were operated upon by fellow surgeons and we submit the following results in regard to the post-operative progress of the patients having undergone operations more or less similar and severe; and the same number of cases operated upon by ourselves where magnesium sulphate plus morphine and atropin were administered prior to the administration of gas-oxygen. The other cases were ether cases. Points specifically considered were as follows, namely: Age and sex of the patient, anesthetic used, lapse of time after the operation before the patient suffered pain and discomfort sufficient to demand an analgesic, and the number of doses of morphine given during the first three days for relief of pain, and the progress of the case during the first three days following operation, such as nausea, vomiting, gas pains, restlessness etc. A study of the record of this series of cases shows that only 4% of the cases operated upon where magnesium sulphate was not administered and where ether was given pursued a comfortable

post-operative course, that is, absence of nausea, vomiting, gas pains, constipation, obstipation, restlessness and apprehension; all of which were present more or less in the remainder of the cases. The cases mentioned in this report all recovered. One can not fail to be impressed with the difference in the post-operative progress of the cases operated upon without magnesium sulphate, where ether alone was employed as a general anesthetic and the cases operated upon where magnesium sulphate was used with gas-oxygen plus local anesthetic.

The record of the cases which we have been privileged to review show that where synergistic therapy was not employed that the average time elapsing after operation before an analgesic had to be administered was 4 hours. And the lapse of time after operation in the cases that had been given magnesium sulphate with morphine and atropin and operated upon under gas-oxygen analgesia plus local anesthesia was 15 hours. A very important advantage for the reason that the patient during the 15 hours following the operation was more or less indifferent to her surroundings—in fact a general analgesic state obtained. The great majority of cases that had not been given magnesium sulphate suffered more or less, were uncomfortable with nausea and frequent vomiting during the 15 hours interval, while their fellow sufferers, who had been given magnesium sulphate and gas-oxygen were pursuing a quiet and comfortable course. It was also noted that patients who were given morphine and atropin alone with ether as a general anesthetic required from two to three times as much morphine after operation to keep them satisfied or comfortable as was required by the patients operated upon where the technique above described and used by ourselves had been employed. The morphine had to be given over a much longer period of time following the operation than was the case where the magnesium was combined with morphine and given before operation.

Comparative Results in administration of from 200 to 400cc of Magnesium Sulphate; 4% Solu-

tion of Magnesium Sulphate Subcutaneously Plus 6 c.c. of a 25% Solution to Which 3/8ths of a Grain of Morphine and 1/150th of a Grain of Atropin Is Added, and; the Results With the Same Technique Omitting the Administration of the 200 to 400 c.c. Subcutaneously were:

A—Less of inhalation anesthetic required where the larger volume of magnesium sulphate was given.

B—Respiration was more slow and shallow.

C—Heart's action was variable, at times becoming quite rapid, generally, however, the pulse was slow

D—A higher per cent of oxygen was required to maintain satisfactory color of patient.

E—General analgesia was more pronounced and there was moderate depression of respiration.

F—Patient entered the operating room with apparently total lack of nervousness or apprehension as to operation or its outcome.

G—The majority of patients complained of, and some objected to, the use of magnesium sulphate—that is the 200 or 400 cc given subcutaneously, and stated that it was somewhat painful, while others stated that it made them nervous, thus counterbalancing to some extent the effect of the solution.

At present we are administering only 25% solution divided into three doses to which the morphine and atropin have been added as above, described in the caption.

H—The two tables embodied in this report were prepared from charts of patients operated upon at the Methodist and Baptist Hospitals, of this city and summary is based upon facts gained from the records of the cases.

From our experience with magnesium sulphate as a synergist to inhalation anesthetic—gas-oxygen and novocain as a local, the following conclusions have been reached:

A—The patient is neither frightened nor apprehensive concerning the operation or its outcome.

B—The stage of induction is generally shortened and there is no period of excitement.

C—Forty per cent of the patients operated upon did not require an analgesic after operation.

D—The appetite returned earlier and was much better than in cases where magnesium sulphate had not been employed because of the absence of pain and restlessness. A point well worth mentioning.

E—Sixty per cent of patients of this series who were administered an analgesic, post-operative, went on an average of about four times as long before the analgesic was required than did patients where magnesium sulphate had not been given prior to operation.

F—The patient remained pink throughout the operation and the pulse rarely exceeded 90, and generally varied from 80 to 84.

G—The use of novocain, 1/2 of a 1 per cent solution at site of operation, including the skin, fascia and peritoneum along the line of incision is employed as a routine. As a result of the use of the novocain the surgeon is enabled to proceed with the operation earlier than he would be able to do otherwise, and without compelling the patient to be conducted under anesthesia to the danger zone—that is profound anesthesia with its accompanying lack of muscular resistance (muscular paralysis)—a dangerous condition never entirely free from risk.

H—The surgeon and the anesthetist cooperating, the anesthetist is enabled to withdraw the gas entirely before the completion of the operation and administer oxygen alone in such a manner that the remaining sutures can be inserted and the dressings applied simultaneously with the return of consciousness to the patient—or just as the patient emerges from the anesthetic.

I—I have never been called upon to administer immediately after an operation a hypodermic of morphine or any analgesic for the purpose of maintaining quietude of the patient. Such an experience, however, was not infrequent before we began to employ synergistic drugs, especially magnesium sulphate, prior to operation. In this connection I wish to state that I know of some surgeons who cannot be induced to administer an analgesic before giving a general anesthetic—ether or gas-oxygen, and I confess that I am unable to

comprehend such logic as I frequently witness the surgeon hurriedly leaving the operating room in order to see that the patient is given a dose of morphine at once with the hope of preventing the patient from emerging from the anesthetic screaming, struggling and suffering great pain, requiring one or more nurses to hold the patient in bed.

J—The plan described is not difficult to execute but cannot be done as a routine and with uniform success, without cooperation between the surgeon and all those participating in the preparation of the patient for operation. The same care should be exercised in the administration of the synergistic drugs as characterizes the proper preparation of the patient for any major or minor operation.

K—We insist upon the magnesium sulphate being chemically pure and bacteria free and that it be dissolved in a sterile normal salt solution freshly prepared. In not a single instance has the magnesium sulphate acted as a cathartic, or produced local trouble.

L—The record of the cases included in this report and in my former report read before the Tri-State Medical Association, in Memphis, November, 1921, has demonstrated that the benefits to the patient accruing from the technique mentioned are unmistakable and of immense value.

M—We are not prepared to state at this time that the large volume of magnesium sulphate—4% solution—can be dispensed with without in some way altering the statistics. However, we feel that it would be safer in the absence of a well-organized corps of assistants for the surgeon to depend upon the use of the concentrated solution dispensed in ampules put up by some reliable manufacturer, to which the morphine sulphate can be added or

a solution freshly prepared by druggists of the concentrated solution.

Fifty per cent of our cases required no ether at all and where ether was given the amount varied from 1 drachm and a half to 6 draehms. From what is known of the effect of ether upon the cells of the liver, we conclude that gas-oxygen is the safer agent of the two; but, as we have said elsewhere in this paper, nitrous oxide-oxygen alone is neither so safe nor satisfactory as a general anesthetic as ether when given alone. The amount of ether required in cases where patients have been given magnesium sulphate with morphine sulphate and atropin sulphate is much less—probably from 40% to 60% less—than where it is administered without the aid of synergistic drugs.

We feel that we have minimized the risk of the inhalation anesthetic to the greatest extent possible at this time, when we shall have selected gas-oxygen as the inhalation anesthetic; and that we have obviated all preventable discomfort due directly to the operation when we shall have ordered—from one hour or an hour and a half prior to the time set for operation—administered $\frac{3}{8}$ ths of a grain of morphine with $\frac{1}{150}$ th of atropin, dissolved in 25% solution of magnesium sulphate—6 e.e.—divided into three doses and administered at twenty-minute intervals: and used liberally along the line of incision a one-half of a 1% solution of novocain.*

*It is ordered that the third dose of morphine be not administered provided the patient is sufficiently under the influence of the morphine hitherto administered, and such cases are not infrequent.

The above dosage of synergistic drugs is intended for adults. The dosage of the same medicine for children to be determined by the age and size of the patient.

TABLE 1.

PATIENTS RECEIVING 6 CC. OF A 25% SOLUTION OF MAGNESIUM SULPHATE DIVIDED INTO THREE DOSES, EACH DOSE CONTAINING ONE-EIGHTH OF A GRAIN OF MORPHINE SULPHATE, WITH ONE ONE-HUNDRED AND FIFTIETH OF A GRAIN OF ATROPINE SULPHATE DISSOLVED IN THE SECOND DOSE.

No.	Sex	Preliminary Medication	Anesthetic	Operation	Progress	Time of Post Operative Sedative.	No. of Doses for 3 days.
1	Female	Morphine 1/8 3 Doses Atropine 1/150 in second dose.	Gas and Oxygen.	Colpo-perineorrhaphy.	Slight nausea at times for 12 hours. No vomiting.	None	
2	Female	Morphine as above	Gas and Oxygen.	Appendicectomy and Cholecystectomy.	Vomited bile once.	None	
3	Female	As above.	Gas and Oxygen and ether 1/2 ounce.	Appendicectomy Removal of specimen of tissue from liver.	No nausea or other trouble.	12 hours following operation given morphine 1/8.	1 dose of Morph. only
4	Male	Same as above.	Gas and Oxygen and ether 10 c. c.	Appendicectomy and Cholecystectomy.	Gastric Lavage twice No nausea only distension.	3 hours Morphine 1/4.	4 doses.
5	Male	Same as above.	Gas and Oxygen.	Appendicectomy	Good no trouble at all.	10 hours Morphine 1/4.	4 doses.
6	Female	Morphine 1/8 2 Doses Atropine 1/150 in second dose.	Gas and Oxygen.	Perineorrhaphy.	Vomited twice clear fluid.	12 hours Morphine 1/4.	2 doses of Morph.
7	Female	Morphine 1/8 three doses. Atropine in second dose.	Gas and Oxygen ether 10 c. c.	Cholecystectomy.	Slight nausea some gas pains.	16 hours Morphine 1/4.	3 doses of Morph.
8	Female	Same as above.	Gas and Oxygen ether just whiffs.	Hysterectomy and double oophorectomy.	Vomited second day clear and greenish fluid.	Nine hours Codein 1 grain.	3 doses Codeine.
9	Male	Same as above.	Gas and Oxygen, ether 1 ounce and local.	Secondary closure	Good.	None	
10	Female	Same as above.	Gas and Oxygen, ether 1 ounce and local.	Nephrectomy.	Good.	28 hours Morphine 1/4.	4 doses of Morph.
11	Female	Morphine 1/8 2 Doses Atropine 1/150 in second dose.	Gas and Oxygen and ether 1 and local.	Hysterectomy.	Gas pains 2nd day.	None	
12	Female	Morphine 1/8 three doses Atropine 1/150 in second dose.	Gas and Oxygen and local.	Perineorrhaphy, appendicectomy and ventro-suspension.	Gas pains 2nd day.	5 hours Morphine 1/8.	4 doses of Morph.
13	Female	Same as above.	Gas and Oxygen and local.	Appendicectomy	Good No nausea.	None	
14	Male	Morphine 1/8 2 doses, Atropine 1/150 in second dose.	Gas and Oxygen and local.	Appendicectomy	Good.	None	
15	Male	Morphine 1/8 3 doses, Atropine 1/150 in second dose.	Gas and Oxygen and ether 10cc. and local	Appendicectomy and cholecystectomy.	Vomited greenish fluid Gastric lavage at times for 2 days.	24 hours Morphine 1/8.	

TABLE 1.—Concluded

No.	Sex	Preliminary Medication	Anesthetic	Operation	Progress	Time of Post Operative Sedative.	No. of Doses for 3 days.
16	Female	Same as above.	Gas and Oxygen and local.	Appendicectomy and Cobelt's cyst.	Vomited twice, a dark brown fluid.	12 hours Bromine.	
17	Female	Same as above.	Gas and Oxygen and local.	Radical Breast amputation.	Vomited clear fluid.	None	
18	Female	Same as above.	Gas and Oxygen and local.	Appendicectomy and Schraeder's operation.	Good.	12 hours Morphine 1/8.	3 doses of Morph.
19	Male	As above,	Gas and Oxygen and ether 12cc. and local	Appendicectomy	Vomited once and had some gas pains	4 hours Morphine 1/4.	4 doses of Morphine.
20	Female	Same as above.	Gas and Oxygen.	Schraeder's Operation.	Considerable nausea and vomiting for 36 hours.	None.	
21	Female	Same as above.	Gas and Oxygen.	Perineorrhaphy	No nausea.	4 hours Morphine 1/4.	3 doses of Mor. g 1-1/8
22	Female	Morphine 1/8 2 doses Atropine 1.150 in second dose.	Gas and Oxygen, ether 10cc	Vaginal hysterectomy, colporrhaphy and perineorrhaphy.	Vomited water and mucous at times for first 12 hours Troublesome gas pains for 4 days.	17 hours Morphine 1/4.	3 doses of Morphine.
23	Female	Same as above.	Gas and Oxygen, local and ether 1/2 ounce.	Appendicectomy and cholecystectomy.	Vomited a dark fluid first 24 hours. Gastric Lavage.	12 hours Morphine 1/8.	2 doses of Morphine.
24	Female	Morphine 3 doses 1/8 each Atropine 1.150.	Gas and Oxygen and local and whiffs of ether.	Appendicectomy and dilatation of cervix.	Slight nausea for 2 days vomited clear fluid once.	None	
25	Male	Same as above.	Gas and Oxygen and ether 4 ounces and local.	Appendicectomy and cholecystectomy.	Slight nausea. Gastric lavage first and second days.	32 hours Morphine 1/4.	2 doses Morph. g 1-1/6.
26	Female	Same as above.	Gas and Oxygen and local ether 1/2 ounce.	Separations of adhesions of stomach to liver with omental graft under liver.	Nausea and gastric lavage for 4 days and considerable gas pains.	6 hours Morphine 1/8.	4 doses Morphine.
27	Female	Same as above.	Gas Oxygen and local.	Barrett's operation and freeing of adhesions in pelvis.	Vomited clear fluid once gas pains for 3 days.	36 hours Morphine 1/4.	1 dose Morphine.

Total lapse of time 255 hours.

Average time 15 hours.

Several patients of this series required but two doses of morphine.

Seventeen patients of this series required post-operative analgesic. Average lapse of time following operation before analgesic was required was 15 hours. Average number of doses of Morphine required by 60% of patients 2-3/4 doses.

Ten of this series, or 40% of the patients operated upon, required no post-operative analgesic, pursuing a course as though no operation had been performed.

TABLE 2.
A PARALLEL SERIES OF CASES WHERE MORPHINE SULPHATE AND ATROPIN SULPHATE ONLY WERE GIVEN PRIOR TO ADMINISTRATION OF THE GENERAL ANESTHETIC, ETHER.

Name	Sex	Age	Preoperative Medication	Operation	Time Before Analgesic	Number of Doses For Three Days	Progress For Three Days
1. C D	F	21	Morphine—Atropin.	Cholecystectomy.	12 hours.	5 doses of morphine.	Much vomiting, some pain.
2. R B	F	27	Atropin.	Cholecystectomy.	8 hours.	{ 2 doses morphine. 2 doses pantopon.	Much vomiting, gas pains.
3.* R C	F	40	Pantopon—Atropin.	Cholecystectomy.	4 hours.	9 doses pantopon.	Vomiting, constipation.
4. H H	F	24	Morphine—Atropin	Cholecystectomy.	2 hours.	6 doses morphine.	Constipation, gas.
5. E G	F	31	Morphine—Atropin.	Appendectomy.	12 hours.	5 doses morphine.	Vomiting, some gas.
6. F J	F	13		Appendectomy.	3 hours.	5 doses codeine.	Vomiting, constipation.
7. C D	F	23	Atropin.	Appendectomy.	1 hour.	2 doses morphine.	Very little discomfort.
8. A S	F	26	Morphine—Atropin.	Appendectomy.	No Analgesic given.		Extreme nausea.
9. L R	M	26	Morphine—Atropin.	Appendectomy.	1 hour.	10 morphine and digitan, 9 morphine.	Much pain, gas, nausea.
10. E F	F	16	Morphine—Atropin.	Drainage of app.	2 hours.	19 caff., 5 morphine, 1 morphine and atropin.	Almost no discomfort.
11. A P	M	63	Morphine—Atropin.	Freeing Stricture.	2 hours.	6 doses codeine.	Some gas, some pain.
12. W L	M	7	Morphine—Atropin.	Freeing Stricture.	1 hour.	3 doses morphine.	Much vomiting and gas.
13. A S	M	38	Morphine—Atropin.	Gastroenterostomy appendectomy.	3 hours.	2 morphine, 3 bromide, 3 pantopon.	Extreme nausea, vomiting.
14. M S	F	17	Morphine—Atropin.	Freeing adhesions.	12 hours.	6 morphine.	Much vomiting, some pain.
15. L H	M	42	Atropin.	Repair of hernia.	2 hours.	2 morphine.	Good condition throughout.
16. S M	M	12	Morphine.	Radical cure hernia.	No analgesic given.		Good condition throughout.
17. R R	M	43	None.	Herniotomy.	11 hours.	2 codeine.	Constipation, gas pains.
18. J H	M	61	Morphine—Atropin.	Herniotomy.	No analgesic given.		No discomfort.
19. V G	F	28	H. M. C.	Removal of app., 1 ovary, 2 tubes, uterus supercervically.	1 hour.	3 morphine.	Restlessness, gas pains.

TABLE 2—Concluded

20. W T	F	18	Morphine—Atropin.	Subtotal hysterectomy.	12 hours.	5 codeine.	Almost constant vomiting.
21. T C	F	63	Morphine—Atropin.	Panhysterectomy.	No analgesic given.		Slight nausea.
22. W C	F	45	Atropin.	Panhysterectomy.	2 hours.	5 morphine, 1 atropin.	Vomiting, gas pains.
23. M S	F	49	Atropin.	Subtotal hysterectomy.	2 hours.	3 morphine, 2 pantopon.	Almost constant nausea, gas and constipation.
24. A C	F	45	Morphine—Atropin.	Supravag hysterectomy.	3 hours.	5 morphine.	Some vomiting, much gas.
25. F M	F	52	Morphine—Atropin.	Panhysterectomy.	7 hours.	4 codeine.	Very slight nausea.
26. C V	F	24	Morphine—Atropin.	Caesarean section.	4 hours.	8 pantopon.	Nausea—much abdominal.
27. J P	F	34	Morphine—Atropin.	Caesarean section.	3 hours.	5 pantopon.	Much restlessness, some gas pains.

Total lapse of time 108 hours.
Average time 4 hours plus.
Twenty-three patients of this series had to be given a post-operative analgesic. The average lapse of time following operation before an analgesic was demanded was four and sixteen-twenty-third hours.
Four only of this series operated upon, or 6.37% required no post-operative analgesic. Average number of doses of morphine per patient, post-operative, was 5-1/6 doses.

GRANULOMA INGUINALE.*

BY PAUL G. MORRISSEY, M. D., NASHVILLE, TENN.

GRANULOMA INGUINALE is a disease chiefly found in the inguinal region, characterized by a chronic ulcerative process involving the external genitals, including the perineum and the inner surface of thighs in the male; while in the female the vulva, anus and perineum are the chief sites of the lesions.

Various theories have been advanced as to its cause; many believe it to be of venereal origin while others regard it as a separate and distinct pathological lesion. In its course it is essentially chronic, usually persisting for months and even years, showing little or no tendency to spontaneous healing.

The ulcerative process usually attacks only the skin and mucous surfaces; rarely does it invade the deeper structures. Clinically it presents itself as a large, red, angry mass of broken down ulcerative tissue which if pressed on or traumatized bleeds freely and easily. These granulations are longest and largest at the margins while the centers appear sunken.

The lymphatic glands as a rule are never enlarged though in some cases the lymph channels have become blocked, producing a pseudo-elephantiasis. The general health of the patient rarely if ever suffers. The history given by the majority of these patients shows the disease begins as a small papule which soon breaks down and becomes ulcerated invading, progressively, the surrounding healthy tissue until it involves extensive areas of the skin in direct connection with and independent of the external genital apparatus. Often these lesions are mistaken for syphilis or chancroid and not infrequently has tuberculosis been a confusing factor. However syphilis is easily distinguished inasmuch as the chronicity of granuloma with the absence of lymphatic involvement and negative blood findings with its subsequent resistance to anti-syphilitic measures should immediately rule it out.

Clinically chancreoid is the one disease to be considered. It, like granuloma, is resistant to most local measures employed though, perhaps, in the past what we believed to be chancreoid was in reality granuloma.

The finding of the Donovan's organisms should readily differentiate the two local diseases.

Women, it is said, are peculiarly susceptible to the infection, more so than the male. To this assertion, is there given any plausible preference to sex, other than the fact that most cases reported have been found in the female? It is not uncommon to find in women the entire vulva and adjoining structures to be a mass of degenerating sloughing tissue, even involving the anus and lower part of the abdomen. Furthermore, lesions have been reported on the face, the lips, and even in the mouth. The process spreads by auto-inoculation and peripheral extension.

Until recently the origin of granuloma was a much debated question. Some observers who recorded having seen the spirocheata pallida in the sores regarded it as a pure syphilitic process. Others were of the belief that it was tubercular.

In 1905 Donovan was the first to demonstrate and describe certain inclusions found in the mono-nuclear cells of the sores that made the disease a separate and distinct entity. Since that time most observers have agreed to the constancy with which this micro-organism is to be demonstrated. And the tendency seems to be in accord with the important role it plays in the production of the disease.

Morphologically the inclusions of Donovan show the organism to be ineapsulated, gram negative, coccoid, and diplo-coccus and bacillus forms. Some investigators have reported that they were able to obtain the organism in pure culture. In our case numerous attempts were made before the organism could be found. Yet, clinically and therapeutically this proved unquestionably Donovan's infection. This belief and assertion was

*Read before the Middle Tennessee Medical Association, Franklin, April 11, 1922.

based on the successful progress made on the tartar emetic treatment.

Conyers and Daniels in 1896 were first to describe the disease and gave to it the name granuloma inguinale. At that time only nine cases had been reported. Since then more than fifty cases have been recorded by various observers in different parts of the world. I have had the opportunity of seeing what I now believe to have been three additional cases occurring in the urologic clinic in Vanderbilt University Hospital. Not being familiar at that time with the disease a diagnosis of syphilis and chancreoid was made. After several months of effort to cure them they finally drifted away and I have not heard from them since. It would seem therefore that the disease is not uncommon in this locality. Most likely it will be found in other communities, especially in the Southern states, where we have so many negroes, for it is said to be a disease chiefly of this race of people.



This fairly prevalent disease has been passing under the general class of venereal sores and has not been recognized as it has in other parts of the world. It has proved to be one of the most troublesome conditions with which we have had to deal. Formerly when the nature of the disease was so little understood, cauterization, arsephenemin and various other kinds of therapy including surgical removal, Roentgen-ray and vaccines were employed with uniformly unsuccessful results.

My attention was first directed to this disorder by an article which was written by Dr. Douglas Symmers of Bellevue in the *Journal of the A. M. A.* just about a year ago describing in detail two cases of granuloma which was in American negroes who had never been

outside of this country. In both of these patients he was able to demonstrate the intracellular inclusions which are held to be characteristic of the disease. It was claimed by the early writers that granuloma was a disease confined chiefly and almost entirely to the tropical countries. Especially has it been found in India, southern China, and the East and West Indies.

To Dr. Douglas Symmers belongs the honor of having been the first to establish the fact that the disease is not peculiar to the tropics but is endemic among the Negroes in this country. Since Dr. Symmer's article numerous other cases have been reported in different sections. Grindon of St. Louis, I understand, reports three cases though his diagnosis was based on clinical and not bacterial findings.

Granuloma inguinale is to be considered a clinical entity. It is endemic in this country, particularly is it found in the negro race and is probably not uncommon.

The diagnosis of granuloma should be considered in all chronic ulcerative lesions of the genitals, especially in the negro.

CASE REPORT.

Negro man, age 52, was admitted to the Urologic service of the City Hospital on Jan. 20th, 1922. He gave his occupation as a day laborer. He was born in Tennessee and has not been outside of the United States. His chief complaint is sores on his feet, groins, penis and scrotum. His family history is negative. His present illness began one year ago before entering the hospital. He first noticed a small sore in his left groin which began to get larger and ulcerate. He was treated by his family doctor but did not improve. The ulceration continued to grow until the entire scrotum penis and perineum were involved. At the same time his toes became gangrenous. Past history: He has been well all of his life except an attack of gonorrhea which he had 20 years ago. Was treated by a doctor and cured. Physical examination shows head and eyes normal. Throat red and inflamed. Nose normal and teeth fairly good. Neck and chest negative. Heart and lungs negative. Abdomen negative. Examination of genital tract shows most of the superficial skin and prepuce to be entirely destroyed. The entire left inguinal

region and inner surface of the left thigh, with the scrotum and the prepuce, is a raw ulcerating mass with a very offensive odor. He had been previously diagnosed chaneroid and syphilis; was anaesthetized and the entire surface on two occasions were cauterized with the actual cautery. In addition to this, several doses of Neo-arsphenamin and mercury rubs were given without the slightest improvement, in fact he was made worse. On April 5th. a provisional diagnosis of granuloma was made and efforts to obtain the Donovan organism were begun. After several attempts it was finally found.

I wish to call attention to an associate lesion and complication diagnosed as gangrene of the feet in this case.

Lynch of Charleston, S. C., reports one case which at autopsy showed marked gangrene of both fallopian tubes. Whether this has any direct bearing or is merely a complication of some cases I am not prepared to answer. Strange to say his feet began to improve with the improvement made in his inguinal region.

At present we can record but one case based on the bacterial findings and the successful improvement made on the tartar emetic treatment.

A course of treatment covers from six to eight weeks. It is advised that about twelve injections intravenously be given after cure is apparently complete to insure against its recurrence.

In different hands the dosage varies, but nearly all have used a 1% solution which may be given intravenously in amounts as high as 20c.c. without reaction. In this particular case we began with 3c.c. in 7c.c. sterile water and increased every 3rd. day 2c.c. of the solution with 2c.c. less water until the full strength of 1% is given. The largest single dose given was 20c.c.

It is claimed that the intravenous administration of tartar emetic constitutes a specific cure.

To Dr. Carnathan of the Pathologic Laboratory of Vanderbilt is due the honor and credit of demonstrating the Donovan's organism in this case.

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THE DIGNITY AND VALUE OF ORGANIZED MEDICINE.*

BY T. R. RAY, M. D., SHELBYVILLE, TENN.

HOWEVER strange it may seem that I should select this subject at this time, the fact remains in my mind, that an organization cannot be greater than the motives and principles for which it was organized and for which it stands, and we should ever be mindful of the fact that unless those principles are conceived in the hearts and minds of men with constructive ideals, and such ideals are the embodiment of the organization, the sooner

that organization comes to grief the greater will be its service to mankind.

No good citizen has a right to identify himself with any movement unless it is a forward movement, and no member of any organization is a potent factor of that organization unless he is a contributor to its ethical standards and high moral principles.

The moment he loses sight of this fact, he becomes as a stagnant pond and if he identifies himself for or later becomes a self-seeking, self-serving individual, then he is as that pond converted into a cess-pool of living micro-organisms, and becomes a menace to all who come in contact with him.

*Presidential Address before the Middle Tennessee Medical Association meeting at Franklin, Tenn., May 11 and 12, 1922.

The science of healing is as old as man, and we as medical men point with pride to those outstanding figures as we turn through the pages of time.

As in the social, political and economical life, there has always been a man in the medical realm, to meet the emergencies and demands of the age. They were men with a vision of mankind's crying needs and with souls yearning to compensate these needs, devoting their lives to its service and oft times giving their lives to its cause.

We have no cause for remorse when we review the records of those who have gone before us and compare their efforts and achievements with those of any like number of citizens in any other walk of life. In civil life every fireside in every American home has been made a little brighter by the fact that the family doctor has ever stood ready to minister to their needs at any hour.

But the noblest achievements of organized and ethical medicine has not been in restoring the sick to health, but in the unselfish service of sanitation and the prevention of disease, which has not only meant the saving of thousands of lives every year but saving millions of dollars to the commercial world by the prevention of loss in labor hours. In military life we do not need to rehearse the wars of a hundred years to find men who have stood by the flag with as much loyalty and devotion as any class or type of citizens. And the services they rendered were indispensable and most glorious. In the religious life they have been a salient factor. It has long been a conceded fact that a missionary station without a medical staff was helpless and almost useless. They have carried the modern methods of medicine and surgery to the darkest corners of the earth to replace the conjuring quacks to the savage tribes.

Shakespeare made Portia, the wife of Brutus, talk of the ruddy drops that visited her sad heart, but it remained for Harvey in 1682 to demonstrate the circulation of the blood and in his day lived such men as Bartholin, Glisson, Highmore, Wharton, Willis, Cowper, and Belinni all of whom are remembered by structures in the human body bearing their names.

This was truly the anatomical age which was logically followed by surgical achieve-

ments both in operations and mechanical appliances. In the seventeenth century the chemists began to do a great constructive work, and we find such men as Von Helmont who first described the gases, hydrogen, carbon dioxide, Sulphur dioxide, etc., and Boyle whom the Irish claim was the father of chemistry; Leuwenhoek and Redi who were the first food chemists. These men gave us some valuable remedies some of which were ammonium acetate, and Glauber's salt.

In the eighteenth century began the classification of medical science and the turning of attention to institutional care of the sick by such men as Haüy, Gallaudet and Pinel. Institutions for the deaf, blind and insane were built and a humane and rational care of these unfortunates was begun.

And the nineteenth century gave to us Jenner's discovery of small-pox vaccination and likewise gave us the great work of Pasteur. These men with scores of others have written their names on the brightest pages of history, by following their convictions of a virtue in a great theory.

We are not to forget that these men had a hard fight in converting their colleagues to a faith in their discoveries, and that the competitive lines were sharply drawn, but they were men with principle above price and honor and integrity were the essential qualifications for membership in their organized bodies in which all the greater lights of the past were identified.

Are we perpetuating these lofty ideals? And will we hand to the next generation a standard of ethics which is not self serving but the noblest of all heritages, self sacrifice?

Ours is indeed a lofty and noble calling, and the real men of honor and of vision have ever carried the banner high and unfurled to the pure breeze of a dignified and professional atmosphere and it is now a challenge to our honor to bear it on to higher and nobler ground.

We are living in the greatest day of the world's history. Startling discoveries and revelations are coming with machine-gun rapidity in all lines. Each day brings us to its new and peculiar demands, and we are taxed to the utmost to keep pace with the procession. Herein lies the great danger that we may be-

come absorbed with the material affairs of our profession and loose the great guiding spirit that has led us to our present high plane.

Intensified interest and devotion to our medical organizations and the great principles for which they stand, alone will avert this calamity. The title we wear is one of the highest honor, handed to us by men who deemed it as such, and there comes with it a corresponding duty and that duty calls only for our highest and noblest manhood which embodies every law of ethics of organized medicine. We are sometimes led to believe however that the code of medical ethics is a peculiar set of rules and regulations complicated and hard of understanding but they are only the plumb line of honor and integrity by which every real man invites measurement.

I am mindful of the fact that we in our organized capacity are oftentimes misunderstood and misrepresented. There are those who appear to believe that we have as our Motive in Chief, mercenary purposes and oppressive intentions. While others think our purpose is to present a solid fighting front against the unethical, unscrupulous and unscientific creeds and doctrines that advertise themselves as panaceas for all the afflictions of man. These are the least of our thoughts and are matters too trivial for our consideration in a scientific meeting, we leave them for the individual to use the intelligence God has given him and choose as his conscience dictates. If he prefers to have spot No. 1 of his spinal vertebra punched to cure his tuberculosis, and takes the chance of having it broken instead of replaced, that is his business. If he prefers to get his prescriptions and have them filled by the advertiser and street spieler why should we worry? Or if he should fall to the inviting mis-branded doctrine of the many times married and once divorced Eddy it is of no concern to us, for we are about a bigger business trying to improve our scientific knowledge that we may render a more efficient service to those who place their confidence and lives in our care. Not only this but we are living for a more sanitary country in which to rear the next generation, believing that every child has a right to be born without the handicap of deformity and disease. We are spending time and money to solve these problems and it would require volumes to tell

of the great achievements scientific research has wrought in this most valuable field.

The unfortunate hand of the past has fallen heavily upon our heads and placed a heavy burden of taxes upon our shoulders. But as citizens of the greatest republic of all time we have accepted the burden and erected the great institutions of reform, education and the various types of hospitals for both the weak in mind and body. These institutions require a great portion of our yearly taxes but they must be maintained and made more modern regardless of cost. But the real solution of this ever growing problem will not come from legislative halls or from building great institutions, but from the ceaseless and untiring efforts of scientific medical research. It cannot come from the dogmas and cults that infest the minds of so many of our good people and at whose shrine they fall and worship to the ultimate dismay of their crying souls.

Their being is not due to an ideal conceived in pure hearts yearning for sacrifice and service for their fellow man and to the generation in which they live, but their ideal has been to gather the sheekles of silver while the harvest was yet ripe. This is why they come and go in the night, and do not remain for the noon day sun to shine its radiant rays of truth upon them. This is why you find no great institutions erected as monuments to perpetuate their memory.

This is why the great government in which we live cannot intrust the health and lives of her gallant soldiers to their care. This is why the great body of organized medical men are moving on from conquest to victory, and why they have come down through the centuries as a mighty force and power in the constructive life of the world's history and this is why they will move on hand in hand with the infinite power of the Prince of Peace to eventually give back to the world a people as in the beginning, pure in body and soul for it is written, "In the beginning God created man in his own image." Transgression of the spiritual law has blighted the souls of men and transgression of the physical law has placed the bondage of disease upon us, and it will require the concerted action of every worthy man of medicine, to play his part worthily, in the great drama of hastening the coming of the perfect day.

PRINCIPLES OF ENDOCRINOLOGY.

BY LOUIS E. BISCH, M. D., PH. D., ASHEVILLE, N. C.

ANYONE who has taken up the study of the endocrine organs even if it be rather a cursory inquiry—must be impressed by the vastness of the field and the intricacies of the embryology, histology, physiology and biochemistry involved. Such an one must also have felt that comparatively little of our knowledge along these lines is at present accurate and that much is still left to theory and individual interpretation. Yet, if interest and research (both laboratory and clinical) keep apace for the next ten years with the same spirit and resourcefulness that has characterized the last ten, endocrinology will no longer remain a mysterious subject familiar only to the specialized investigator but it will have become harnessed, classified, and reduced to such simple terms that every clinician will be able to use it as a genuine, everyday, working hypothesis.

Just where to fix the earliest beginnings of endocrine therapy is difficult for it is said that the Chinese used canine orchitic extracts in treating obesity and that dried frogs and newts were employed for heart disease and epilepsy. "Decoctions of toads, lizards, spiders, etc., have been used therapeutically from time immemorial with results that were potent but entirely misunderstood until recent investigation has shown that the skins of these animals and insects contain an appreciable amount of adrenalin owing to the presence of cutaneous adrenals." (1)

There is no doubt also that for centuries past marked physical and mental changes followed removal of the sex glands in youth must have been noted, nor must we overlook the fact that animal breeders use such empirical knowledge long before the relationship of these organs to body growth and efficiency was scientifically understood.

Our modern conceptions of the tremendous role played by the internal secretions dates from 1855 when Thomas Addison described the disease that bears his name and explained his findings on pathological grounds—the destruction of both suprarenal glands. After that

nearly thirty years elapsed before a further advance was made and then attention was directed to the thyroid. Myxoedema and cretinism were described clinically (by Charcot and others) and their symptoms attributed to diminished function of this organ, while in 1886 Moebius suggested that Basedow's disease depended upon an increased activity of a ductless gland. Later Brown-Sequard called attention to the increase of corporeal and mental powers following subcutaneous injections of the juice of the testicle into his own body. When Von Mering and Minkowski discovered pancreatic diabetes the way was explored by which, later, Opie, Weichselbaum and others pointed out the histological alterations in the insular apparatus in diabetes mellitus. Several years after Blum elucidated the glycosuric action of suprarenal extract. Then followed such correlations as tetany being caused by parathyroid disease, acromegaly by disturbances of the hypophysis, and the relationship of the pineal and suprarenal cortex to premature development.(2)

It does not seem to be generally understood that organs other than the half dozen or so specific endocrine glands which go by that name furnish "internal secretions." Yet any material that is passed into the blood or lymph stream as a manufactured part of any organ or tissue comes properly under the caption of an internal secretion. Thus secretin, which is elaborated by the epithelial cells of the duodenal mucosa and by its absorption into the blood activates the flow of pancreatic juice, is as important an integral secretion to the body economy as is adrenalin or thyroid extract. In fact, it is probable that most, if not all, organs, parts of organs, and tissue substances secrete some active principle which is vitally essential to themselves and to the physiological needs of all the organs as a whole or, as in the case of secretin just mentioned, to some organ distant from it in anatomical position.

However, although not quite justified by present advances in the study of endocri-

ology it has been found practical to limit the term internal secretion to the endocrine glands. Since these particular glands are generally without ducts (in contrast for example, to the salivary glands which secrete ptyalin and pour the saliva into the mouth by means of direct channels the term "ductless glands" is often applied to them. These endocrine or ductless glands are further characterized by the fact that they elaborate specific secretions which contain certain powerful chemical substances and these substances then taken up by the blood or lymph which passes through their structures.

The term "hormone" is usually employed to designate these active chemical principles of the secretions of the endocrine glands. Properly, however, secretine or ptyalin are just as entitled to be included within the category of hormones as in the hormone of the thyroid. In last analysis, all hormones have at least these characteristics in common: they possess specific physiological properties and they act as chemical messengers either by stimulating or exciting, or by depressing or inhibiting the cell function of other organs.

One may further restrict the hormones for study by recognizing a special ductless glandular system, the members of which have "intimate physiological reciprocal relations." Falta takes this view, following the work of Pinelas, and adds: "Diseases very frequently affect several ductless glands simultaneously, and lead not only to simultaneous diminution of function, or to a combination of increase of function in some of these organs and to diminution of function in others." (3)

The organs comprising the ductless glandular system are the thymus, the pineal, the pituitary body, the suprarenal capsules, the thyroid, the parathyroid, the ovaries and the testes. Although the pancreas has a duct and is therefore not strictly a ductless gland, it is known to possess special hormones and is usually included within this system. The spleen has also been described as furnishing an internal secretion which activates the proteolytic ferment of the pancreas. (4)

In recent years considerable attention has been given to the pituitary body. The difference in the history of its various parts and of its several hormone activities influencing

numerous physiological states will give a fair idea of the complications that endocrinology presents.

Timme (5) in summarizing observations by Cushing, Schafer, Howell, Tilney, Wiggers, Dale and others, discusses the pituitary as follows:

"The gland ought really to be considered as heterogeneous; it has three distinct parts: (1) The anterior lobe known as the pars anterior or pituitary gland proper, formed by epithelial cells arising originally from the buccal cavity; (2) a posterior lobe, pars nervosa, or the infundibulum, a true glandular formation whose lumen connects with the third ventricle of the brain; and (3) a pars intermedia consisting of an investing epithelium for the infundibulum and divided into two distinct parts—pars tuberalis and pars infundibularis and uniting anteriorly with the pars anterior. The importance of these distinctions is obvious when we know that their functions are different, although as yet only approximately understood, and that the clinical manifestations of their disease are quite different and their therapy correspondingly altered. The anterior lobe in general is believed to control connective tissue growth in the body, especially the skeletal. The posterior is credited with properties stimulating metabolism; maintaining blood pressure not only through the agency of a pressor principle, but also of a depressor one, which has been extracted from the gland with alcohol. It is said to increase peristalsis and stimulation of the sympathetic system generally, thereby improving nutrition; it increases the production and flow of the mammary glands. It stimulates uterine contractions, increases the urinary excretions, and has lately been credited with increasing the absorption of cerebrospinal fluid. On account of its great sympathetic stimulating properties, it has become the remedy "par excellence" in surgical shock, being far more efficacious in this regard than adrenalin. The pars intermedia is said to produce a diuretic hormone which is the basis of a diabetes insipidus. The gland as a whole has a direct influence also in genital development, and an inhibitory action upon the activity of the pancreatic juice. The numerous physiological properties of the posterior lobe may be per-

haps explained by the result of the investigations of Fuhner, who isolated eight different active substances from the posterior lobe. From this short synopsis of the characteristic activities of the hypophysis, in which most observers are agreed, we can readily see how intense a general disturbance of the bodily functions a disturbed pituitary gland may lead."

That the endocrine system plays a vitally important part in the body and mental development of the individual is undeniable.

As you know, the thymus attains its maximum growth toward the end of the second year and after that may remain stationary or gradually diminish in size until puberty, when its involution is very rapid. Apparently the reason for this degenerative process at puberty is because the hormones of the thymus are inhibitors of the development of sex structure and this retarding influence is necessary in the early years of life in order to avoid sex precocity. Apparently this relationship in the male is pronounced. Thymic influence on skeletal growth (calcium bone metabolism) is also marked and in conjunction with it pituitary (especially anterior lobe), adrenal, thyroid and parathyroid activity is important. In persistent thymus cases ("thymic subinvolution") the general appearance of the male is decidedly feminine: absent or sparse hair on the surface of the body, a horizontal hair line at the mons, small genitals, smoothness of the skin, slow pulse, low blood pressure, hyperacidity, fatigability, etc. In premature degeneration of the thymus one finds an opposite picture: short stature, stocky build, early development of hair, early development of breasts in females with precocious menstruation, high blood pressure, mental precocity, irritability and impulsiveness, lack of inhibition. (6)

Concerning the pineal little that is satisfactory is known. However, it is possible that the gland really functions, perhaps in the way of a retarding influence on the pituitary, and in cases where the radiograph reveals a pineal shadow (pointing to persistence or overdevelopment of pineal tissue or tumor) there is mental precocity, markedly enlarged genitals, and muscular weakness and atrophy. (7)

The manifold functions of the pituitary

have already been touched upon, especially with reference to the posterior lobe. The anterior lobe has been studied even more carefully and in working out diseased conditions both increased functioning (hyperpituitarism) and decreased functioning (hypopituitarism) must be taken into account, not only in post-adolescent stages of growth but also in pre-adolescent development. The symptoms which such combinations present are numerous and interesting. By way of illustration let me cite just one of them. In pre-adolescent hyperpituitarism there is an unusual growth of long skeletal bones made possible because the epiphyses have not yet become ossified and united. The result is gigantism. On the other hand, if there is increased function of the anterior lobe (hyperpituitarism) during post-adolescent stages, when the epiphyses have already become fixed, the increase of skeletal growth does not take place lengthwise in the long bones but there is a general spreading of bony structures. This gives rise to broad hands and feet, an enlarged, square skull, protruding lower jaw, and a kyphosis of the spine—in short, the condition called aeromegaly.

In diagnosing plus or minus functioning of the pituitary, radiography is often of great assistance. A fairly clear picture can sometimes be obtained of the sella turcica, the bed in which the pituitary body lies. Whether this pituitary fossa is markedly enlarged or whether the clinoid processes seem to enclose the sella or are eroded—these and other anomalies of bony structure give one, by inference, an idea as to the overgrowth or undergrowth of the pituitary itself or as to the presence of tumors.

Regarding the suprarenals or adrenals, Dr. Timme has brought out the salient points in his excellent lecture on "Clinical Endocrinology." (8) Following are certain quotations from this source:

"The suprarenals are composed of two widely different tissues, the cortex and the medulla. The medulla is composed of cells which have an identical origin with the cells of the sympathetic nervous system and are chromaffin in nature.—The suprarenal cortex is embryologically descended from the same tissue as the ovaries and interstitial cells and histologically they are much alike. As a re-

sult of their widely different origin, the medulla and cortex of the suprarenals may be looked upon as different organs.—The juxtaposition of cortex and medulla, however, is in all probability purposeful, the secretion of the one possibly balancing the other. The secretion of the medulla is of such nature that it stimulates the sympathetic portion of the vegetative nervous system, that it maintains blood pressure and smooth muscle tone and prepares the individual for the necessary aggressiveness required to survive. But in high development, this animal aggressiveness and combativeness is tempered not only by judgment on the psychic level, but also by a certain inhibition of the vegetative activity occasioned by the adrenal medulla. This inhibitory limitation on the vegetative level is assumed to be applied by the suprarenal cortex. Hence the greater the cortex in relation to the medulla, the higher the organization in the scale of life.—(In man the ratio between cortex to medulla is 9 to 1. In the lower scale of animals it is much smaller. It is possible to draw the general conclusion that the suprarenal cortex varies directly with the cerebral cortex)—The cortex, arising from the same source embryologically as the glands, would seem to possess properties analogous to them. As a matter of fact, curious changes in the sexual characteristics of the individual are manifested in cortical suprarenal disease.

“Our knowledge of the suprarenal cortex is very fragmentary and its real part in the internal economy practically unknown. The suprarenal medulla is, on the contrary, the best known of the internal secretory organs, its product, adrenalin, being the first of its active principles to have been isolated. It is now also produced synthetically.

“Adrenalin specifically stimulates the sympathetic fibres and ganglia of the vegetative nervous system and hence has a depressive effect upon the autonomic or extended vagus system. The results of this activity are far-reaching. Another specific activity of adrenalin is its effect upon the mobilization of sugar from the storehouse, the liver. It is this added sugar content in the blood which enables the muscles to perform with greater energy than before, and is purposeful in that it

fits the individual for the strife or flight which his senses tell him faces him.”

Addison's disease is, of course, the well known adrenal disturbance. Here the characteristic sign is a peculiar pigmentation of the skin, varying from a light yellow to a deep brown, and most marked on exposed surfaces of the body. With this, general asthenia is prominent due to lack of smooth muscle tone and gastro-intestinal symptoms are common.

Other indications of adrenal insufficiency are low blood pressure, slow pulse, ptoses of viscera, gastro-intestinal hypermotility, eosinophilia, and many phobias and neurotic fears.

In hyperadrenia (increase of adrenal secretion) we have symptoms that closely resemble hyperthyroidism and a differential diagnosis between the two conditions should always be thought of.

Timme (9) compares these states clearly. His differential points follow. “In the hyperadrenal individuals we see all the effects of sympathetic overstimulation. The hyperactivity, producing increase of pulse rate, heightened temperature, increase of blood sugar, intense psychomotor activity and a supremely intense individual, is sometimes with extreme difficulty only, differentiated from a hyperthyroid state. In both conditions do we have an increase in basal metabolism, and in both also frequently a tendency to exophthalmos. However, the hyperadrenal state is usually accompanied by heightened blood pressure, whereas the overactive thyroid state is the antithesis in this regard except when accompanied by hyperadrenal conditions. The hyperadrenal condition also produces no such hyperhidrosis as does the hyperthyroid. The red cell count in hyperadrenal states is also very high, six or seven million red cells being common. The theory of this polycythemia is that there is greater viscosity of the blood plasma, much of the water being abstracted, and causing thereby a greater concentration of the red cells. The increase is therefore but apparent. It is important to realize the difference in these two conditions, for therapy depends upon such distinction. Other points in the differential bearings are that in the thyroid state, hyperacidity of the gastric juice is present, and there is increased mo-

bility of the intestines with several bowel movements daily. In the adrenal state the opposite is true."

This brings us to disturbances of the thyroid gland. Here, again, as in all endocrine organs, we have to consider increased as well as decreased functioning. For a better understanding let us consider briefly the nature and chemical effects of its hormones.

E. C. Kendall (10), of the Mayo Foundation, has isolated in crystalline form from the thyroid a compound containing a high percentage of iodine. This compound he calls "thyroxin" and, apparently, it is the active secretory principle of the thyroid organ. Experimentally its use in animals and men has shown a decided increase of metabolism. It has been found that thyroxin further breaks down protein-splitting substances, reducing amino-acids (the result of partial protein destruction) into water, carbon dioxide and ammonium carbonate—the ammonium carbonate being finally converted into urea by the action of the parathyroids. In other words, the combined function of the thyroid and parathyroid hormones is to prepare the products of the body oxidation for easy elimination. In this concept of metabolic disturbances in thyroid disease we have the crux of the whole problem.

Thus, in hyperthyroidism, we find a rapid pulse, especially marked after exercise, emotional disturbances, and the ingestion of large amounts of protein food; a moderate rise of temperature, varying from a half to one degree daily; an increase of basal metabolism with occasional loss of weight; an inordinate desire for all kinds of food, chiefly of a protein nature; an increase of all excretions excluding perspiration; exaggerated reflexes often spurious ankle clonus; tremor of hands and sometimes muscle spasms due to probable disturbance of calcium metabolism; markedly increased psychic and motor unrest. Whether the blood pressure is low or not depends upon the suprarenal cortex which acts as an antagonist to the thyroid. This has already been touched upon previously.(11)

In hypothyroid states the opposite of the foregoing symptoms takes place. If the deficiency of thyroid occurs at birth cretinism results—if an adult life, myxoedema. In both

these conditions increase of subcutaneous tissue is found due to a low metabolic rate. Mental and motor powers are sluggish. Cretins are stunted in stature and definitely feeble-minded.

The parathyroids are still imperfectly understood although they seem to influence calcium metabolism and to destroy certain waste products of general metabolism, the presence of which irritate muscle and nerve tissue. Tetany is a parathyroid disease of the under function variety. Paralysis agitans may also be connected with dysfunction of these glands. Although in such close anatomical relationship to the thyroid these glands differ from it in histology and physiology. Their structure resembles the anterior lobe of the pituitary body.

Regarding the ovaries and testes much experimental work has been done on animals. The inhibitory effects of the thymus and pineal have already been mentioned. Diseases or injuries of the gonads often produce the so-called "secondary traits" (feminism) as evidenced by a high-pitched voice, sparseness of hair, smooth skin, flaring hips, etc. as well as mental make-up that is retiring, subdued, and over-refined. Ovariectomy in females does not produce the striking external effects that result from a similar operation in males. However, a constant result in women, if the operation be performed before puberty, is that the uterus remains small, menstruation is absent, and a male type of trichosis often follows. After puberty menstruation also ceases and the mammae sometimes atrophy.(12) With the ovaries and testes the interactivity with other glands is so inherent and varied that a disturbance of their internal secretions cannot be considered separate and apart from the other endocrine hormones.

Perhaps this cursory review of the functions, normal and abnormal, of the several endocrine organs has sufficiently emphasized the intimate relationship between one gland and another. From a clinical viewpoint cases of pure and sole involvement of any one gland are uncommon if, indeed, at all possible. Every patient, therefore, showing signs of endocrine involvement should be looked upon as presenting a pluriglandular syndrome.

Thus, although cretinoid and myxoedematous states are considered classical examples of deficient thyroid functioning, one cannot treat such conditions intelligently without taking into account the part the pituitary plays in reference to skeletal, metabolic and sex growth. In my own experience there have been cases that responded promptly both mentally and physically to increasing doses of thyroid extract yet, after several weeks of such treatment, the improvement slowed up and only seemed to revive again when what might be called provocative doses of anterior pituitary were administered.

It is impossible for practical ready reference to divide the endocrine system into glands or hormones that are synergistic, antagonistic or activating because of the pluriglandular relationship already mentioned. Furthermore, compensatory reactions between the glands is already a factor to be reckoned with. One may therefore see a case of Addison's disease in which insufficiency was not the original source of trouble but, rather, in the beginning, the pituitary being hyperactive, the adrenals tried to compensate for the increased blood pressure, and having become hypoactive themselves toward compensation, pigmentation of the skin resulted although the blood pressure may have become normal. (13)

It is not feasible within the limits of this paper to discuss at length the vegetative or autonomic nervous system which is so important in interpreting the pathogenesis of the ductless glandular diseases. May it suffice, therefore, to touch upon only a few essentials.

The vegetative nervous system is not subject to voluntary control; it supplies chiefly those body organs that have smooth muscle fibres, and its function is to a very great degree independent of the central nervous system. This last is because "the somatic or animal nerves pass uninterruptedly from the central nervous system to their organs of supply while the vegetative nerves are always interrupted in the vegetative ganglia" (14) situated in the floor of the fourth ventricle and elsewhere. This is the system involved in functional nervous diseases. The hormones of the ductless glands, passing into the blood stream, activate this system while all psychic

states of pain, fear, compulsion, anxiety, or whatever, reflexly influences the endocrines.

The vegetative or autonomic system may be divided broadly into two groups: the sympathetic and the vagus. These two groups are largely antagonistic in function as illustrated by well-established physiological findings that sympathetic fibres accelerate heart action while the vagus slows it, etc.

Accordingly we see that the vegetative nerves constitute a highly adjusted system of accelerators and inhibitors in the same way as does its close ally, the internal secretory system through its various hormone interrelationships. The result is a finely attuned mechanism with wheels within wheels and against wheels, as it were—all making for great variability and smoothness of function in instant response to the ever-changing demands and adjustments of the mind and body.

Whether it is because of the close relationship existing between endocrines and the nervous system that diagnosis and treatment of internal secretory disorders seem to have fallen particularly within the province of the neurologist, I am not prepared to say. The fact remains that attention is often first directed to the endocrines because of neuropsychiatric symptoms presented.

Personally, I have become convinced that endocrine unbalance is a most frequent, if not perhaps even a constant, correlate with all nervous manifestations, especially in women, and I often employ such therapy in conjunction with purely psychic treatment—such combination, in my opinion, hastening recovery and tending to make it more stable. The thyroid, adrenals, and pituitary are most frequently involved in the psychoneuroses, and nearly always, so far as my own experience goes—which corroborates that of others—all three of these glands, and sometimes others besides, require attention.

Feeble-minded states often are benefitted by endocrines and it is remarkable how the mentality will quicken and the physical characteristics tend to fade out in cases of cretinism and mongolism. However, I have never seen nor heard of an absolute cure for aments. Beginning psychoses are also often benefitted especially the manic-depressive and melancholic. *Demetia praecox* in its incipi-

ency sometimes responds in a surprising manner to combined psychic and endocrine therapy. Epilepsy has also yielded to the endocrines.

The manifold somatic and psychic symptoms occurring during the menopause react in a most gratifying way to an adjustment of the glands of internal secretion. The non-surgical treatment of thyroid and pituitary disorders by means of endocrines is receiving more and more attention. The use of endocrines in gynecology is very satisfactory especially in reference to menstrual disturbances and ovarian disorders. In general medicine such conditions as anemia, high blood pressure, intestinal stasis, etc., are being subjected to glandular medication. Sergeant (16) has claimed that adrenal insufficiency is the rule in tuberculosis.

Certainly an advantage to the physician who always considers a possibility of endocrine unbalance is the necessity which such an hypothesis places upon him of taking a careful and detailed history. At the same time such procedure sharpens his powers of observation in discerning objective physical signs.

After a time one comes to recognize certain types by the bodily appearance and designates them, as thyroidal, adrenal, pituitary or gonadal, or as a mixture such as pituitoadrenal, and so on. For example, thyroidal individuals have clean, white, well-formed teeth; thymus types shows pitting and poor enamel due to deficiency of calcium salts; pituitary teeth are also well-formed and white but separated; in gonadal types one finds irregularities of form and size, the lateral incisors often being missing; thyroid teeth also show irregularities of size and shape, with disproportionately large central incisors and "canines that lack a fang-like character, the edge being cutting like that of incisors." (15) Other suggestive physical signs could be enumerated but the limits of this paper forbid.

As Bandler (16) says, "The treatment by endocrines follows two plans: first, give those extracts of which the body is producing too little; secondly, if the body is producing too much of any one extract, attempt to counteract this overcapacity by giving other hor-

mones which diminish, oppose or inhibit this oversecretion."

Even if we avail ourselves of the laboratory aids now in use to determine endocrine dysfunction—among others, the Goetsch test and the respiratory quotient for hyperthyroidism; estimation of sugar tolerance in pituitary disorders; the lymphocytosis in thymus cases; Erb's galvanic reaction in parathyroid disease; Sergeant's White Adrenaline; and the fluoroscope—still, none of these give any idea as to the amount of glandular extract or substance that it is necessary to administer in order to restore balance.

This may be said, however, that the disappointing results often reported by physicians who are not in the habit of employing endocrine therapy is due very often to giving too large doses. It must be remembered that the hormones of the internal secretory system are not drugs but enzymes or ferments. They are inherent, indispensable, physiological properties of certain tissue functioning and normally they are present in the circulation in only small amounts.

Furthermore, the proper treatment by endocrines is usually a slow and painstaking procedure, extending over many weeks, and attended often by variable degrees of improvement, exacerbation of symptoms or even the appearance of new ones during the progress toward readjustment. Now one extract is added, now another is taken away; at one time dosages are increased, then again they are decreased—the whole treatment being in essence a controlled, scientific, individual experiment, not haphazardly undertaken, but conducted with the utmost care and diligence, the psychic side being no less important than the organic. By the very theories underlying endocrine dysfunction no two persons could possibly have the same type of unbalance in every particular and hence no two persons—even if presenting almost identical symptoms—would be treated exactly alike. Therefore no "rule-of-thumb" method could be advocated or is applicable. Each case is an absolutely individual and personal study.

The pluriglandular nature of endocrine disorders has given rise to a method of treatment in which several glandular extracts are administered at a single dosage. The theory is

that by such a shot-gun method you reduce speculation to a minimum, and that the glands needing medication will take it up and while those that don't, won't. Not only does this theory tend toward superficial study of cases—a thing most pernicious in endocrinology—but there are no sound, scientific facts to support it. It has not yet been established that even in hypofunctioning the diseased glands will continue to be activated until a normal is reached and then ceases to be influenced. It is known, on the other hand, that very delicate yet powerful influences exist between the actions of the several glands upon each other and it is probable that such interrelationship varies in different individuals, and that even in any one individual the relationship varies from time to time. If, after careful study and treatment of a patient several extracts are given, each for a specific purpose, or the combination with a definite aim in view, there can be no criticism. However, when such pluriglandular doses are given haphazardly, without proper study, and simply in order to find an easy way out of a complex problem, the procedure should be condemned. Such blind therapy may do more harm than good.

The earlier in the course of the disease process dependent upon endocrine unbalance one begins treatment the better. In fact, there are cases of such long standing, with compensatory reactions already so firmly fixed, that the administration of glands of internal secretion is of little or no avail. One should not wait, if possible, until the signs and symptoms are unmistakable; one should begin treatment even when the clinical picture is only suspicious.

I have found that treating patients with endocrines from the office is unsatisfactory. It is best to make them bed cases and in an environment that is simple and as free from nerve-irritating influences as possible. Especially should one guard against letting them know the exact amounts of extracts adminis-

tered or informing them of the changes that follow—such knowledge, together with variations in the pulse rate, blood pressure, or the results of laboratory tests, tending to a kind of morbid introspection to which many patients with endocrine disturbances are very susceptible.

The endocrines influence, directly or indirectly, every organ and tissue of the body. Inversely, as it were, any disease or malfunctioning may be due directly or indirectly to endocrine dysfunction. It is obvious, therefore, that the physician who studies and employs organotherapy tremendously augments thereby his therapeutic armamentarium.

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PROCEEDINGS OF THE SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY—EIGHTY-NINTH ANNUAL MEETING OF TENNESSEE STATE MEDICAL ASSOCIATION, HELD IN MEMPHIS, TENN.,
APRIL 11, 1922.

THE scientific program of the Section was resumed at 9 o'clock, A. M., today, pursuant to adjournment of yesterday.

On Monday, April 10, no papers were read, the members of the Section attending numerous clinics at the various hospitals in the city of Memphis.

The Section was called to order by Dr. E. B. Cayce, Chairman.

On motion of Dr. Hilliard Wood, of Nashville, duly seconded, the reading of the minutes of the last meeting was dispensed with.

The Chairman.—The appointment of the Committee on Nominations is next, and I will appoint Dr. Wood, Dr. Ellett and Dr. Potter, as the Committee on Nominations for officers for the next year, and I will ask them to report immediately after luncheon, at which time the election takes place. Is there any other business?

Secretary Blue.—Mr. Chairman, I would like for the gentlemen whose names I have not yet on the Register, at lunch time, when we adjourn, to come up here and sign this register, please.

Chairman Cayce.—We will now take up the scientific papers. The first paper on the program is "The Relation to the Internist to Disease of the Eye, Ear, Nose and Throat." Dr. L. M. Scott, of Jellico.

Dr. L. M. Scott.—Mr. Chairman, and Gentlemen of the Section: I feel like apologizing to this Section for this paper. It is rather too elementary for a body of men of this character, but I will inflict you with it, just the same.

It was discussed by Drs. Price, Potter, Richmond McKinney, Olin West, Shambaugh, Marcens Feingold and in conclusion by the Author.

Dr. Hilliard Wood, Nashville.—Mr. Chairman, as every one here knows, we are just losing the Secretary of this State Association, and the Editor of the Tennessee State

Journal. I move, therefore, that this Section thank Dr. Olin West for his active interest in this Section since its organization, and learns with regret of his removal from Tennessee.

Dr. George H. Price, Nashville.—I second the motion.

Chairman Cayce.—It is moved and seconded that Dr. West be thanked by this Section, and that the regret of the Section be extended him. All in favor of this motion make it known by saying aye.

The motion was carried unanimously.

Chairman Cayce.—The Secretary will notify Dr. West. The next paper on the program is "After Cataract," by Dr. Wood, of Nashville.

Dr. Wood's paper was discussed by Drs. Feingold, Ellett and in conclusion by Dr. Wood.

Chairman Cayce.—The next paper on the program is "The Technique of the Heath Mastoid Operation," by Dr. Simpson of Memphis.

Dr. W. Likely Simpson, Mr. Chairman, and Gentlemen of the Section: About two years ago I read a paper on "Indication for the Health," at Louisville, in the Southern Medical, and there were a good many men that asked questions about the technique. There was more discussion there of the technique than of the indications, and a good many of them suggested that we write a paper on the technique. That was the reason for this paper.

Dr. Simpson's paper was discussed by Drs. Farrington, Shea, Blassingame, Cullom, Ezell and in conclusion by Dr. Simpson.

Chairman Cayce.—The next paper on the program is Lateral Sinus Thrombosis Complicating Mastoiditis by Dr. W. G. Kennon, of Nashville.

Dr. Kennon's paper was discussed by Drs. Potter, Ezell, Farrington, Lewis, Wood, Blassingame, Shambaugh, Price, and in conclusion by the author.

Chairman Cayce.—We are about ready for adjournment now. The Arrangement Committee has very kindly prepared lunch for us, which we will enjoy after the adjournment. We will adjourn now until two o'clock. When we convene again, we will have the report of the Nominating Committee. I hope they will get together between now and two o'clock, and we will have their report, and then the election of officers for the ensuing year, which will occupy only a few minutes; then we will have an illustrated paper by Dr. Feingold.

A recess was here taken until 2 P. M.

In the interim between the adjournment for luncheon and the afternoon session, the Nominating Committee, Drs. Hilliard Wood, E. C. Ellett and W. W. Potter, met and prepared their report.

The Section was thereupon recalled, and received the report of the Nominating Committee. Said report was as follows:

The following members are nominated for election to office for the ensuing year, viz:

For Chairman, L. M. Scott, M. D., of Jellico, Tenn.

For Vice-Chairman, Louis Levy, M. D., Memphis.

For Secretary, J. B. Blue, M. D., Memphis.

On motion by Dr. George H. Price, of Nashville, which was duly seconded, the Secretary was authorized to cast the ballot of the Section, duly electing the gentlemen named for the respective offices, which was accordingly done.

On motion, duly seconded, Dr. George H. Price, Dr. Hilliard Wood and Dr. M. M. Culom were appointed by the Chairman as a committee to escort the newly elected Chairman, Dr. L. M. Scott, to the Chair.

AFTERNOON SESSION.

Dr. Louis Levy, of Memphis, was called to the Chair, and opened the meeting.

Vice-Chairman Levy.—Gentlemen, the next on the program is "The Diagnosis of Fundus Lesions," by Dr. Marcus Feingold, of New Orleans, La., with lantern slides.

Dr. Marcus Feingold, of New Orleans, La.,

presented lantern slides giving the text and illustrations of the subject stated.

Hilliard Wood, M. D., Nashville.—Mr. Chairman, we have listened with a great deal of pleasure and instruction to this most illuminative address upon these changes by Dr. Feingold, and I move a rising vote of thanks to the Doctor for this contribution.

E. C. Ellett, M. D., Memphis.—I second the motion.

The motion was unanimously carried, viva voce.

Vice-Chairman Levy.—Gentlemen, the new Chairman is here in the room. I suggest Dr. Wood, and Dr. Potter bring him to the Chair.

Dr. Wood.—Gentlemen, I present to you, your new Chairman, Dr. Scott. (Applause.)

L. M. Scott, M. D., Jellico.—Gentlemen of the Section, I certainly consider this a very distinct honor, which was thrust upon me in my absence. However, I want to extend to you my deep appreciation for this recognition. I think, however, you have made a mistake in electing me for this office, because I know you have men here more capable than I to fill that position. But I shall endeavor to do my best in this capacity, and I hope that you will find me no slacker. I shall endeavor to do my best to fill the position as Chairman of this Section.

And looking over the times since we first organized, I believe I was a charter member of this Section, and we had our first meeting in Knoxville. The question came up here this morning as to how old this Section is; we differed in our recollection of the time, I thought that this Section is six years old. At one time it looked like the Section was about to be dissolved, but I think a happy idea of Dr. Kelly, who injected the political feature into it, has kept it alive.

I wish, while I am on my feet, to extend the thanks of this body, also, to the specialists of Memphis, for the splendid clinics they have given here for us, also to the gentlemen of Nashville. They have certainly done themselves proud, and I think they have added very much to the success of this occasion.

The next on the program is a paper by Dr. Willard Steele, of Chattanooga, "Differential

Diagnosis of Deafness," I understand Dr. Steele is not present. The next paper will be a paper by Dr. Ellett, "Intra-Ocular Tumors," with lantern slides.

Dr. E. C. Ellett, Memphis, read his paper illustrating with lantern slides. It was discussed by Drs. Cullom, Feingold and Priece.

George H. Priece, M. D., Nashville.—Before we adjourn, I move that we return a vote of

thanks to the profesion of Memphis for their care and consideration, and the arrangements they have made, and their most lavish and hospitable entertainment.

The motion was duly seconded, and carried viva voce.

On motion duly seconded and carried, the Section adjourned.

MINUTES OF THE MAY MEETING OF THE JEFFERSON COUNTY MEDICAL SOCIETY.

The Jefferson County Medical Society met at Jefferson City, May 9, 1922 at 1:30 P. M. The meeting was called to order by the President, Dr. B. M. Tittsworth. The Secretary being absent Dr. W. R. Cross was appointed to take his place.

Dr. N. M. Dukes gave an interesting report of a case of "Intestinal Obstruction" which was discussed by Drs. W. H. Taylor, Doane, Campbell, Tittsworth and Roberts. Discussion was closed by Dr. Dukes.

Election of officers was then taken up and the following elected for the ensuing year.

President, Dr. H. L. Campbell, Strawberry Plains, Tenn.

Vice-President, Dr. B. E. Olive, Strawberry Plains, Tenn.

Secretary and Treasurer, Dr. T. A. Caldwell, Dandridge, Tenn.

Censor, Dr. W. R. Cross, Dandridge, Tenn.

A resolution was introduced by Dr. W. H. Taylor, that the By-Laws of the Society which required meetings to be held in the various towns of the county be changed so that the Society would meet each month either in Dandridge or Jefferson Cty. This motion was tabled until next regular meeting.

The following members were selected to read papers on "Colitis" at next meeting: Dr. W. H. Taylor, Dr. B. M. Tittsworth and Dr. W. R. Cross.

The Society then adjourned to meet in Dandridge on 1st. Tuesday in June.

B. M. Tittsworth, M. D., President.

W. R. Cross, M. D., Sec. pro tem.

EDITORIAL.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

JUNE, 1922

THE WORKMAN'S COMPENSATION ACT.

FROM time to time mention has been made in these columns of the injustice done the medical profession of the State by the enactment of the Workmen's Compensation Act in 1919. This injustice is due not to the act as such, for most people believe that Workmans Compensation is progressive legislation, but it is to some of the provisions of the Workmans Compensation act which physicians of the state do and should object to and one of these is that only \$100 is provided to defray any and all expense incident to the treatment of any accident of whatever magnitude sustained by the employee. Manifestly this amount is totally inadequate in the more serious injuries. One obvious example would be a fractured limb where x-ray, anaesthetic and confinement in a hospital are imperative. One hundred dollars would hardly pay for these items which are in truth incidental to the real work of the physician in attendance.

At the last meeting of the State Association at Memphis the matter of Workmans Compensation was thoroughly discussed in the House of Delegates. From the number of cases related by the delegates it was evident that the inadequacy of the statute was felt throughout the state. And it was quite obvious that this was not a problem of the surgeon in the city alone. Every physician in the state has or will be affected. The sentiment was so strong in the House of Delegates against this act as it stands at present that five hundred dollars was voted to be expended by the Legislative Committee to defray any legitimate expense in effecting an amendment to the act as it now stands.

At the present time candidates for the House and Senate of the next General Assembly are announcing themselves. It should be the duty of the officers of every medical

society to interview these candidates to the end that their position in regard to the Workmans Compensation Act be thoroughly understood before election. Regardless of party affiliation the voting strength of the medical profession should be given the candidates who favor a reasonable fee for the physician or institution for the care of those who are injured in industry.

G.

EDITORIAL.

This journal was established to serve all the legitimate purposes of the Tennessee State Medical Association.

Ideas in furtherance of the betterment of the individual members of the Association as a whole, often arise in the minds of our fellows, but are lost from lack of dissemination or as we now often express it "broadcasting." To obviate this condition it is the purpose of the Journal to conduct a department under the head of "COMMUNICATIONS," contributions to which, are invited from the entire membership of the Association, especially from the Councillors, Chairmen of the Standing Committees and other officers, to the end that anything subserving the general good of the Association or its Component Societies or individual members may receive full discussion and consideration.

Among other things thereby accomplished it may be possible by this means to crystalize many questions coming before our annual meetings so that they may be intelligently dealt with, with a minimum consumption of valuable time, during the sessions.

To quote in part from a letter written by the Field Secretary of the A. M. A., Dr. Olin West, appearing in "The Bulletin" of the A. M. A.—(See Miscellaneous Section, page 126 this issue.)

"It is hoped that this" Journal "may be made the medium for exchange of ideas between" the members and officers of our Component Societies, presented for the purpose of promoting the cause of organized medicine and that it may serve acceptably as a means of expression of opinions on matters pertaining to the welfare of the medical profession" and especially to this Association and its members.

If any one believes that the Tennessee Medical Association is not doing something that it should be doing or is doing something that it should not be doing, put your ideas in writing and then send them in.

Communications intended for this section may be addressed to the "Communications" Editor, at 154, 8th. Ave. N., Nashville, Tenn.
—S.

TEN WAYS TO KILL A MEDICAL SOCIETY.

Don't go to the meetings.

If you do go, go late.

If the weather doesn't suit you, don't think of going.

If you do attend a meeting, find fault with

the work of the officers and members.

Never accept office, as it is easier to criticize than to do things.

Get sore if you are not appointed on committees, but if you are do not attend committee meetings.

If asked by the chairman to give your opinion on some matter, tell him you have nothing to say. After the meeting tell everybody how things should be done.

Do nothing more than absolutely necessary, but when members use their ability to help matters along, howl that the institution is run by a clique.

Hold back your dues, or don't pay at all.

Don't bother about getting new members.
"Let George do it."—Pittsburgh Medical Journal.

MISCELLANEOUS.

NEWS NOTES.

The thirty-first annual meeting of the West Tennessee Medical and Surgical Association was held in Jackson, Tenn., on May 16th., and 17th. There were about one hundred and fifty members in attendance and twenty-two papers were on the program. Dr. John R. Caulk, of St. Louis, Mo., and Dr. Ellett Royer of Chicago, Ill., were the invited guests. The number of Memphis Doctors attending were noticeable.

The officers elected for the ensuing year were: Dr. R. L. Greer of Norwood, President; Dr. L. J. Lindsley of Covington and Dr. B. S. Penn of Humboldt, Vice-Presidents. Dr. I. A. McSwain of Paris was elected Secretary-Treasurer for the thirty-second consecutive time. Dr. G. R. McSwain of Paris was elected Assistant Secretary-Treasurer.

One of the features was the presentation of a loving cup to Dr. I. A. McSwain by Dr. Frank Smythe of Memphis on behalf of the Association. This was voted by the Association at its previous meeting in Paris last year in recognition of the long and efficient services rendered by Dr. McSwain in making the West Tennessee Association one of the best sectional societies in the State.

The next meeting of the Association will be held in Dyersburg next May.

HOW TO GUARD AGAINST UNSCRUPULOUS PATIENTS.

Thoroughly practical is the annual report of Mr. George W. Whiteside, legal counsel, presented to the Medical Society of the State of New York at its recent annual meeting at Albany. From it are selected the following suggestions, offered for the protection of physicians in their relations to the patients:

"Use x-ray in diagnosis of all fractures and dislocations both before and after the fracture or dislocation is reduced. The x-ray plate provides a permanent record of the condition and reduces the element of possible fraud upon the physician. In orthopedic work often ordinary photographs of conditions that would not be indicated by the x-ray are likewise of value.

"Where a physician is dismissed from a case, a letter to the patient, the physician retaining a carbon copy, fixing the time and circumstances, might prevent a future claim by the patient that the physician abandoned the case. This claim by patients has arisen in a

number of cases, where the true facts clearly indicated that the physician was dismissed and another physician employed.

"In cases of children particularly, although clinical diagnosis may not indicate diphtheria, cultures from the nose and throat should be early taken. Suits have been based upon the claim that such cultures were not taken, where fortunately the physician was able to show from the records of the Department of Health the taking of such cultures.

"Where diphtheria is present in one child in a family, similar cultures may well be made of the other children and members of the family. This practice should at least be advised by the physician to the family and while of doubtless benefit to the family as a precautionary measure may eliminate and prevent the probability of claims against a physician.

"The early use of antitoxin in all diphtheria cases in doses suggested by the health authorities is recommended.

"Where intubation is necessary, insist that the patient be in charge of a nurse competent

to act when conditions indicate the necessity of reintubation, so that intubationists may be summoned promptly. In the absence of such expert nurse advise hospital treatment.

"Advise either patient or family of the probable outcome of disease or operation where feasible. This may avoid claims against a physician where unsatisfactory results are inevitable in the nature of the case but, through patient's ignorance or otherwise, claims against a physician are made.

"Time and frequency of visitation to sick patients in serious cases should be determined by the physician and not by the family. A doctor's desire to save a patient expense may be considerate for the patient's purse but may be hazardous to a doctor if subsequent claim of neglect of the case is made.

"Keep records of every patient treated so that the transaction may be identified. Records made at the time of treatment may be invaluable to the physician in establishing the falsity of the claim made against him."—The New York Medical Week.

WHAT THE MEDICAL SOCIETY MEANS TO A PHYSICIAN.*

By DR. WILLIAM GRAVES, ST. LOUIS.

The questions implied in the topic assigned me can best be answered by reciting some of the purposes and activities of a well organized medical society. The office of a physician is as old as human history, but the medical society is a modern institution. A well-organized medical society as we know it today, such as the St. Louis Medical Society, is a forum where the best medical thought, opinion, and achievement find expression and discussion. It preserves the ideals and promotes the aims of the medical profession. It admits to membership only those legally, morally and professionally qualified to exercise the functions of the physician. It demands that its members uphold moral laws and the laws of the land as these are expressed in good citizenship. It disciplines by censure or expulsion those members found guilty of moral or pro-

fessional misconduct. In its scientific program it supplies its members with a form of post-graduate instruction that is indispensable to the family physician and to the ultra-specialist alike. It owns and maintains a reference library, representing the best in literature of the medical sciences. It endeavors to disseminate useful knowledge of the medical sciences relating to the principles of disease control and prevention, to sanitation, to hygiene of the body and mind and to the care of the sick and injured. It cooperates with the United States, state and city authorities in their efforts and in all other well-directed efforts tending toward the prevention and control of disease and the promotion of health in the individual, in the home and in the masses.

It manifests a sympathetic interest in its own members and in their families in the trying situation of illness or death. It commemorates and endeavors to perpetuate in proper form the virtues and achievements of its own members. It promotes a fraternal spirit, thus minimizing that spirit of envy, jealousy or

*Presented by invitation to the Teachers' Fellowship Society of St. Louis, February 18, 1922. Reprinted from Bulletin St. Louis Med. Soc., Feb. 23, 1922.

selfishness common to human nature. It endeavors to promote the spirit of cooperation among its members in the cause of humanity, thus encouraging the growth of charity, goodwill and altruism. It is unalterably opposed to quackery and to nostrums wherever and in whatever guise they may be found. It is unalterably opposed to the enactment of any law tending to lower existing standards of medical education. It is also unalterably opposed to the enactment of any law tending to legalize ignorance or superstition in the care of the sick and injured.

The personal benefits and the opportunities for greater usefulness accruing to a physician who becomes a member of a well-organized medical society must be obvious to any one who will consider some of its purposes and activities as just recited. There are, however, other advantages accruing to the physician, chief among which is identification with the State and American Medical Associations, to which associations he is admitted without further obligation. The St. Louis Medical Soci-

ety is a component of the American Medical Association, which Association now has a membership of more than 85,000 leading physicians, representing practically every hamlet, town and city in the country. During the eighty-three years of its existence it has become a great power for human advancement. It may be stated without fear of contradiction that the American Medical Association, with the support of its component county and city societies and its state associations, has done more to raise the standards of education in our medical schools; more to further post-graduate medical work; more to promote the aims and ideals of physicians everywhere; more to awaken medical and public interest in public-health matters; and more to further human health and consequently human efficiency than any other single agency in human history.

In conclusion permit me to say that the medical society means to a physician opportunities for continuous growth . . . greater usefulness to his fellowmen.

—Bulletin A. M. A.

A MEETING OF THE CADUCEUS MEDICAL SOCIETY.

AS FANCIED BY WALTER BRICKNER, M. D., F. A. C. S., NEW YORK, N. Y.

Dr. Bromide presented a case of *Nail-Biting Due to Focal Infection*.

The patient was a young woman of 52. Her father was a minister, but her family and previous history were otherwise irreverent. She never had blastomycosis, schistosomiasis, meralgia paresthetica or ancanthosis nigricans. She menstruated regularly at 3 o'clock every fourth Thursday, except Thanksgiving day and occasional at silent intervals due to suspected pregnancy. For eight years she had been biting her nails with steady increasing voracity. She had consulted manieres, chiropractors and other doctors—all of whom had failed to find the cause of her malady or to relieve it. Then she consulted Dr. Bromide. Being an ear specialist, he was reluctant to take the case, but it so excited his scientific curiosity that he consented to do so. He had the patient removed *immediately* to the hospital for further study. There she was cystoscoped, pyelographed, bronchoscoped, lumbar punctured and sigmoidoscoped, with negative findings. Her blood count was within normal limits, and so was her colloidal gold reserve—considering the present rate of exchange. During periods of nail-biting her pulse was exaggerated, but electrocardiography showed the P-

wave and T-wave in their proper alphabetical relationship. Her A-bile, B-bile and C-bile also showed no alphabetical disturbance, and she denied G. and S. Ear tests by caloric stimulation showed normal nystagmoid reactions. There was no pastpointing or ataxia. Also there was no astereognosis, adiadochokiness or other polysyllabic symptom. Her Wassermann was negative; so were her Meltzer, her Rovsing, her Ewald, her Rehfuss and her Wolff-Junghaus. She had no MacEwen, Argyll-Robertson, Stellwag, von Graefe, Chvostek, Romberg, Brudginsky, Babinski, Chaddock, Gordon or Oppenheim Collins. Her urine contained epithelial cells and urea, but was otherwise normal. Her blood chemistry was also normal except for a marked increase of the keratin content, obviously due to the ingestion of finger-nails.

All of these tests and examinations failing to show any other cause, Dr. Bromide concluded that the etiology of the disease was a focal infection. The tonsils having been somewhat removed in childhood, he had all her teeth extracted. Thereupon the nail-biting ceased *cito, tuto et jucunde* and has not since returned. He presented the patient as an instance of focal infection causing an obstinate and

prolonged disease, promptly cured by the removal of the foci. He had had cultures made from the roots of the teeth and, if there should be any return of the symptom, which he doubted, he would inject these vaccines under the nails.

In discussion:

DR. BUNDLER said that Dr. Bromide and the society were both to be congratulated on the presentation of this highly interesting and instructive case. The report was so complete that little could be added. Nor could one well criticize the logical diagnosis offered, in the face of a cure so striking. It occurred to the speaker, however, that Dr. Bromide had curiously enough, omitted to test the basal metabolism. It has always seemed to him that nail-biting, tooth-sucking and other habit-neuroses if, in the light of modern medical science, they may be called neuroses (for which such terms are but a cloak for our ignorance), are traceable more or less directly to disturbance of the ductless glands, to a state of endocrine imbalance, so to speak. In earlier days we talked of vaso-dilators and vaso-constrictors; we have been passing through the era of vagotonia and sympathetonia; we are entering the period when we must talk in terms of those no longer mysterious bodies that control these manifestations.

These data (or is it "this data"?) having been springs and balances that control metabolism, socialism, health, wealth, puberty, piety, waste, and repair, growth and death, judgment and error, fear and fury, war, rebellion, fires, volcanoes, earthquakes and Tom Watson. Can anyone doubt that when Bernard Shaw wrote "Back to Methuselah" he was plus-pituitary? Can anyone who sits through it be other than hypo-adrenal? Consider the discharges from these glands that enter the blood stream! Note that while the thyroid discharge is activating, the adrenal is inhibiting, the anterior pituitary is productive, the inhibiting, the anterior parathyroid sedative and the pineal—ah, the pineal!

These data (or is it "this data"?) having been demonstrated and now generally accepted, how can we apply them—or it—to the treatment of nail-biting? "Let me illustrate," said Dr. Bundler, "by a case of my own. This was a young spinster of 49, who had been nail-biting since the menopause (hypovarian). I put her on a mixture of ovarian, thyroid and adrenal extracts, with just a dash of testicular extract. As an adjuvant she was given a tonic containing strychnine, nux vomica, iron, arsenic and the glycerophosphates. The doses were steadily increased until, at the end of three years, she suddenly stopped nail-biting. At the autopsy next day no focal infection was found. You see, therefore, that we must not draw too sweeping conclusions from Dr. Bromide's isolated case. Focal infections may, and probably do, play a large role, but we must eliminate and treat the other disorders that underlie the baffling malady called nail-biting, of which, as my case illustrates, endocrine disturbance is the most important."

DR. TANNERBILL said he was much impressed by Dr. Bromide's presentation and by the remarks of the last speaker. Nail-biting was an old disease, one of the few that had not been thoroughly described by Virchow. It had come down to us through the years. Did not Shakespeare tell us that the Capulets (or was it the Amulets?) and the Montagues bit their thumbs when they passed, to express disdain? Nail-biting was an expression of *repressed* emotion. To cure it one must discover the unrecognized emotion by psychoanalysis. Freud himself—or was it Oedipus?—had showed that every individual who bit his nails had wet his diapers in infancy—clearly an affect of the libido, a sexual dysphrenia, so to speak. In every case of nail-biting one must seek out the repressed desire, the provoking subconscious irritation. Discover it—or supply it—and the patient is cured! Dr. Tannerbill had under treatment a woman of 28 who began nail-biting two years after she married. He has psychoanalyzed her 48 times and believes that after another 50 sessions something will happen. What did her nail-biting represent symbolically? Hunger! Hunger! Hunger for food? No, her husband allowed her \$8 a week for the table and she had corned beef and cabbage, beef stew and pies whenever she wanted them. Hunger for what then? Hunger for love! Hunger for her husband's love! "On the 36th analysis," said the speaker, "I learned that he was a street-car conductor, all day in the company of other women. On the 41st analysis she told me that in his sleep he sometimes said 'fair lady; lively lady.' Clearly he was dreaming his 'wish fulfilment.' Subconsciously she feared that she might lose his love. She did not know that she feared this, but I knew it, and I told her. Little by little—for one must be insistent in psychoanalysis—she began to believe that I was right,—not, as yet, that her husband did not love her, but that she subcutaneously feared that he might cease to love her. On the 45th analysis she reported to me that he looked at the corset advertisements in the theater programs—another symbolism. He was beginning to sublimate! Another detail convinced me that I was on the right track: the husband, as I said, was a carpenter, and often had nails in his mouth. Was it not clear that she must have thought of him biting these ten-penny nails and, fearing that he might some day cease to love her, the imitative act, the symbolic representation, of biting *her* ten puny nails was subcutaneously suggested and performed! Here is a complete complete—the sex relation, the suggestion, the repression, the symbolism—a perfect exposition of the disturbed libido. Moreover, and this is significant, when the husband learned that she was coming to me to be psychoanalyzed for biting her nails, he began tearing his hair. Could incompatibility be more evident! He does not understand his wife, he inhibits her soul expression. Although she did not know it, she feared she'd lose her husband. She *shall* lose him. In another 50 seances I'll have them divorced. Then she'll have to earn her own living and will not have time to bite her nails. Is it not better to cure

a woman of nail-biting by extracting her husband than by extracting her teeth!"

DR. ADAMANTE said he, too, thought that nail-biting was a nervous manifestation. He believed it has increased as a result of reaction to the war and the high cost of manicuring. He recalled a case of nail-biting in a mechanic, which had resisted all treatment. One day the man lost his hands in a chopping machine, and the nervous shock was so great that he stopped biting his nails at once.

DR. ATTABOY congratulated Dr. Bromide on his result. He would like to ask whether any food-deficiency studies had been made in the case. How can one feel justified in attributing nail biting to local infection, endocrine disturbance, subconscious repressions or nervous shock, without eliminating food

deficiency? Dr. Attaboy did not refer to calories merely. Calories were enough in their way, but they are not this year's model. He had in mind the vitamins—the water-soluble and fat-soluble vitamins, the A vitamins and the B vitamins! He had had no personal experience with cases of nail-biting, but it seemed to him that if it indicated hunger, as Dr. Tannerbill had so eloquently shown, it might be hunger for vitamins. He thought that this was a field that invited further inquiry.

In closing Dr. Bromide said that he was glad his case had evoked so much scientific discussion; and that he had thought of endocrines, and symbolism and vitamins and all those things, but, after all, he was an ear specialist; and besides the prompt cure of his case proved the correctness of his diagnosis.—*American Journal of Surgery, June 1922.*

FROM THE FIELD SECRETARY, A. M. A.

The following letter has been sent to the presidents and secretaries of all state medical societies by Dr. Olin West, who was recently made Field Secretary of the American Medical Association. While this particular letter was addressed to the executive officers of state societies only, it is hoped that other officers of these societies and those of the component societies will act upon the request carried by the letter:

The position of Field Secretary of the American Medical Association has recently been created, with the hope that through the activities of such official the resources of the Association might be made more readily available for service to its constituent associations and to their members. Having been assigned to this position by the Board of Trustees, I am desirous of obtaining suggestions that will help to determine just what I, as Field Secretary, can do to establish and maintain more intimate contact between the Association and its component units, and to extend the service of our national organization to its members generally.

As one of the means of advancing the interests of medical organization, there was established some years ago the American Medical Association Bulletin, in the editorship of which it is now my privilege to be associated with Dr. A. R. Craig, Secretary of the Association. It is proposed to make this Bulletin what it was originally intended to be, namely, an organization bulletin. Its columns are open to the members and particularly to the officers of state and district medical societies and their component bodies for discussion of organizational and other subjects of general interest. It is hoped that the Bulletin may be made the medium for exchange of ideas between the officers of medical societies, presented for the purpose of promoting the cause of organized medicine, and that it may serve acceptably

as a means of expression of opinions on matters pertaining to the welfare of the medical profession and to the general welfare.

It is my desire to be of real service and to do what I can to bring about a realization of the purposes of the Board of Trustees and other officers of the American Medical Association in creating the position of Field Secretary. Your suggestions as indicated above will be awaited with interest and will be sincerely appreciated.

With most cordial wishes for you and for your society, I am

Very truly yours,

(Signed) OLIN WEST, Field Secretary American Medical Association.

VISUALIZING OUR COMPOSITION.

In medicine we often get so close to the details that we do not see the whole; so close to the forest that we can not see the woods for the trees. This is especially true in respect to things that are examined with the microscope or determined by microchemical methods. Luden has called attention to this tendency, and points out a number of quantitative facts that are somewhat startling. For example, the entire volume of circulating blood, which about half fills an ordinary bucket, contains only a small teaspoonful (from 4 to 6 gm.) of sugar and a tablespoonful (32 gm.) of salt. When we consider the minute variations in the sugar content that the modern chemist can measure in a few drops of blood, we gain added respect for the science of quantitative analysis. The iodine in the entire blood amounts to but 0.01 gm., or an average dose of atropin. When the physiologist tells us that epinephrin can be detected by biologic

methods in a dilution of 1:330,000,000, it means far less than to say that it is equivalent to diluting "a small glass of whisky (10c.c.)"—a very small glass, that—into the contents of 1,320 city street sprinkling carts, which would form a procession about six miles long. We all know that the normal blood contains about 5,000,000 red corpuscles in each cubic millimeter, but do we all realize that the entire blood must therefore contain some 25 trillion (25,000,000,000,000) red cells and 30 billion leukocytes, figures that have an astronomical aspect? And do we realize that in all that mass of blood is distributed the insignificant quantity of from 1 to 3 grains (65 to 200 mg.) of uric acid, which we assay accurately and speculate about vaguely? Luden quotes an amusing, if not very precise, estimate of the total chemical composition of "the average man," which has recently been published by a big industrial company, and which may be thus summarized: fat enough for seven bars of soap; iron enough for a medium sized nail; sugar enough to fill a shaker; lime enough to whitewash a chicken coop; phosphorus enough to make 2,200 match-tips; magnesium enough for a dose of magnesia; potassium enough to explode a top cannon, and sulphur enough to rid a dog of fleas. Many items in this estimate are left largely to imagination, such as the size of a dog and the number of his tormentors, but the total cost of the ingredients is given as 98 cents, which is neither expensive nor calculated to foster megalomania. The practical value of visualized scientific data lies not only in the stimulation of memory through the imagination, but also in the food for thought which they offer and in their bearing on great medical problems. If mental pictures of the billions and trillions of blood cells crowding, jostling, and possibly struggling for a share of the mere teaspoonful of sugar in the total blood volume of a full-sized man, or the endless procession of sprinkling carts representing the epinephrin concentration to which animal tissues respond, appeal to one's sense of humor, they also do much more than this: They bring home the delicacy of the adjustment by which the human body mechanism is regulated; the extent to which this fine adjustment may be disturbed by seemingly trivial factors; the obligation of both laymen and physicians not

to ignore the "slight" tokens of distress of the body engine, and the value of comparing the quantities used in the body chemistry with the "dosage" in therapeutics.—*Jour. A. M. A.*, May 6, 1922. •

MAN-MADE MALARIA.

The task of eradicating malaria, says the U. S. Public Health Service, has been made doubly hard by the continual creation of fresh mosquito-breeding spots by impounding water either intentionally or unintentionally—for instance, in the course of highway or railway construction. Owing to this a considerable portion of the malaria in the country may be termed "man-made." Asst. Surgeon General Carter, for instance, found that probably three-fourths of the malaria in a district in eastern Virginia came from such artificial pools and swamps.

Man-made malaria is of special importance at present because of the recently enacted Federal highways act, which provides many million dollars for building additional good roads in the South. The specifications require that culverts on these roads shall be so placed that they will completely drain all wet areas above the culvert entrance and that all borrow pits or excavations made along the roadways shall be filled or properly drained. Many Southern States have enacted laws of similar purpose.

It is of the utmost importance to the public health that these State laws and Federal regulations shall be faithfully observed while the roads are being built, for at that time adequate drainage can be had with very little if any additional cost; whereas if through carelessness or wilfulness the culverts are placed too high or the borrow pits are not properly drained the expense for later rectification may be very great.

The State highway engineer of Alabama recently strongly appealed to all state and county engineers and road officials to cooperate in carrying out these laws and regulations. Every community in the South should take particular interest in this subject and all good

citizens should promptly report the whereabouts of any such disease-breeding spots that are being created in their vicinity and should insist on their eradication. Not to do so will inevitably mean more mosquitoes and more malaria about their homes.

No road, however necessary for travel, can be called good if it interferes with proper drainage.
—U. S. P. H. R.

RENAL FUNCTION.

The brilliant work of Richards on kidney function recently published in the *American Journal of the Medical Sciences* goes far to explain how a kidney eliminates from the blood of definite composition a urine differing widely in composition from that of the blood. By his observations on living kidneys, he has been able to bring into view groups of glomeruli, some active and others at rest. Under the

influence of stimuli chemical and otherwise, inactive glomeruli could be seen to take on activity and an increase in the rate of urine output immediately observed. This has gone far to settle the discussion between the two schools of physiologists who claim on one side that the secretion of urine was purely physical, and on the other hand it is an act of secretion exercised by the epithelial cells either of the capsule of Bowman or of the uriniferous tubules.

While the work of Dr. Richards is extremely interesting and goes far towards proving that renal function depends largely on glomerular pressure, we are awaiting with considerable interest for him to explain that phenomena which regulates the resorptive function of the tubules and the power which brings into activity various groups of glomeruli.
—U. S. P. H. R.

BOOK REVIEWS.

THE PRACTICAL MEDICINE SERIES, 1921—Comprising eight volumes on the year's progress in medicine and surgery. Under the general editorial charge of Charles L. Mix, A. M., M. D. Volume VII, *On Skin and Venereal Diseases*. Edited by Oliver S. Ormsby, M. D., and James Herbert Mitchell, M. D.

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This series is published primarily for the general practitioner, at the same time the arrangement in several volumes enables those interested in special subjects to buy only the parts they desire.

THE YEAR BOOK PUBLISHERS,
304 South Dearborn Street, Chicago.

"THE EIGHTEENTH AMENDMENT AND THE PART PLAYED BY ORGANIZED MEDICINE," by Charles Taber Stout. Mitchell Kennerley, N. Y.

This tome of about two hundred pages by Mr. Stout (or is he a Doctor? that meaningless term now ap-

plied to physician and chiropractor alike) proposes to show the great wrong that has been done the "dear people" by the enactment of the Eighteenth or Prohibition Amendment to the Federal Constitution. He attributes the great prohibition movement to "three great and thoroughly systematized interests," viz.: The American Medical Association, the Life Insurance Companies, and the Standard Oil Company.

As for the part played by the American Medical Association he states that "as far back as 1907 the Association had an agent in each of the 2,830 counties of the United States and its list of approachable political leaders numbered 16,000". The fight waged by the A. M. A. on patent medicines he believes to be the real beginning of the prohibition movement. In his assault on the Life Insurance Companies and the statistics of their actaries he pays his repeated respects to Dr. Eugene Lyman Fisk, head of the Life Extension Institute. While we hold no brief for Standard Oil, we believe that no one has ever proved that the prohibition movement was financed by Mr. Rockefeller though his Sunday school proclivities are well known.

Whether alcohol is a medicine or not is still debatable. The referendum of the American Medical Association showed a slight majority in favor of it being so. Those authorities most capable to judge are at variance as to its food value. Whether it increases mental and physical efficiency we do not believe that the author's citation of the amateur

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REDUCTION IN DIARRHOEA AND ENTERITIS.

BY E. L. BISHOP, M. D., *Bureau of Rural Sanitation, Tennessee State Board of Health.*

ONE of the most encouraging signs of the increasing protection being thrown around the infant life of Tennessee is the steady decrease in the number of deaths of infants under two years old from diarrhoea and enteritis. Since 1917 there has been a decrease in the number of such deaths from 1681 in that year to 934 in 1921, a reduction of 44.4% from the number of deaths five years ago. More than that, the number of deaths in 1921 was lower than in any previous year in the history of death registration in Tennessee, though 1915 and 1916 both show fewer deaths—due probably to poor death registration—than the year 1917. The following table shows this reduction:

DEATHS FROM DIARRHOEA AND ENTERITIS OF INFANTS UNDER TWO YEARS OLD.

Reduction from previous year.

Year	No. Deaths	Reduction from previous year	
		No. Deaths	Per cent
1917	1681		
1918	1402	279	16.6
1919	1130	272	19.3
1920	984	146	12.9
1921	934	50	5.1
Total since 1917	.....	747	44.4

What has caused so material a reduction and one that has been so consistently maintained? Certainly no one cause can be assigned but perhaps the one most expressive word would be Education. Efforts of physicians, health departments, both state and local, and the tremendous flood of publicity given the measures found of preventive value must now be bearing fruit, for there has been no other modifying factor of which the writer is aware.

If the past has proven what enlightened effort on the part of the medical profession can do when taken together with a growing enlightenment on the part of the public, let us in future still further shorten the lines of communication between the source of dependable information and the individual mother, to whom such information must be made available if it is to be of practical value. Much has been done, but much remains to be done, and as it is the ease in preventable disease the second half of the battle will be harder than the first.

REPORT OF TWO UNUSUAL CASES; DOUBLE ECTOPIC PREGNANCY WITH FOETUSES AT FULL TERM: PORRO CESAREAN SECTION DUE TO DISTORTION OF THE UTERUS AND TRANSVERSE PRESENTATION.*

BY H. M. TIGERT, M. D., F. A. C. S., NASHVILLE, TENN.

CASE ONE. A. Y. Negress. Age 30, married five years, was admitted to the Vanderbilt University Hospital on June 28, 1921.

Chief Complaint.—Enlargement of the abdomen of three years duration, which had recently undergone considerable increase.

Family History.—Unimportant.

Past Personal History.—Mother of three children,—two living and one dead. She had pneumonia at the age of fifteen; malaria at the age of twenty-two. She is habitually constipated. Menarche at the age of fifteen, regular, moderate flow, four-day duration, twenty eight-day cycle, associated with pain and clots.

Present illness began three years ago when the patient had a pregnancy said to have reached full term. Foetal movements were felt and labor pains experienced, but finally ceased. No foetus was expelled, and the abdomen remained enlarged. The menstrual flow, which had been absent, returned.

In October, 1920, the menstrual flow ceased again, and a few months thereafter her abdomen began to show still greater enlargement, especially in the lower left quadrant and left loin. For three months prior to admission into the hospital the patient had rapidly declined in health, having lost considerable weight and experienced constantly increasing weakness. There were severe pains in the back, loins, and abdomen all the time. A foul sanguinous vaginal discharge was present.

Physical Examination.—The patient is a poorly nourished woman, obviously quite ill.

The head is normal.

The eyes are normal except for slight exophthalmos.

The pupils are equal and react normally to both light and distance.

The sclerae are slightly pigmented.

The ear, nose and throat are negative.

Mouth negative.

Teeth show some decay.

Neck negative.

Marked infraclavicular depressions. Chest hyperresonant on percussion but slightly dull over bases. The breath sounds are clear. Vocal fremitus not increased. No rales heard. Symmetry and expansion normal.

Heart and pulse normal.

Spine slightly rigid.

Lymph glands are not palpable.

Abdomen:—The abdomen is very markedly distended by a large, irregular mass which appears to spring from the pelvis and extends on the right side to the costal margin, and on the left side it occupies the left iliac fossa and left loin. One portion occupying the upper right abdomen is slightly movable. On percussion fluctuation is present in places.

The genitalia are normal externally. On vaginal examination the cervix is found to be soft and the canal dilated sufficiently to admit one finger. The cervix is drawn up posteriorly so that it is difficult to reach. The pelvis is found to be filled by the mass and the body of the uterus is not discernible.

The extremities are normal, except that both feet are slightly edematous, worse on the right.

Reflexes sluggish.

Rectal examination disclose same mass felt by vagina. X ray examination of abdomen:

Due to the extreme thickness of the abdomen in the anteroposterior diameter the plate was made laterally from the right side. The plate showed a well-formed foetus, probably full term, beneath the abdominal wall. A questionable second pregnancy was made out posteriorly, the head being the only part seen. The anterior foetus was apparently outside of the uterus. The position of the second was undetermined.

Urinary Examination: negative, except albumin was two plus and a few pus cells were present.

*Read at the meeting of the Tennessee State Medical Association, Memphis, Tennessee, April 11-13, 1922.

On the day of admission to the hospital the blood showed fifty-five per cent. hemoglobin, white cells eleven thousand, red blood cells three million one hundred thousand. Blood typing:—group four. During the twelve days in hospital her temperature ranged from ninety-nine to one hundred three and one half, and the pulse rate from one hundred to one hundred twenty. From time to time severe rigors were experienced, and on two occasions chills associated with profuse sweats occurred.

On the second day in the hospital while making a vaginal examination a membranous looking piece of tissue, measuring eight by seven by three centimeters, was obtained from the cervix. The specimen had a foul odor and was covered with blood. Upon microscopic examination it showed numerous decidual cells; hyperemia of the blood vessels, and collections of the cells. No chorionic villi were observed. A diagnosis of double ectopic gestation was made.

It was apparent, both from physical examination and X-ray findings, that one foetus was contained within the abdominal cavity. The location of the second foetus was doubtful.

Although the surgical indications were perfectly clear, no operative procedure was attempted, because the severe grade of sepsis and the asthenic condition of the patient precluded any hope of success. A blood transfusion of six hundred c. c. slightly improved the patient's condition, but not sufficiently to warrant operation. The patient died on July 10, 1921, having been in the hospital twelve days.

Post Mortem by Doctors B. T. Terry, and W. G. Carnathan.

Cause of death; Sepsis due probably to absorption of toxic and harmful substance from the ectopic pregnancy associated with the left fallopian tube.

The abdomen is extremely prominent and shows silvery striae on either side. Except for the distension of the abdomen no external deformities are noted. On making the usual longitudinal incision the abdominal fat is found to be about 5 mm. in thickness and is of a yellow color. As soon as an incision is made into the abdomen a large amount of thick, yellow pus is seen along the left side beginning above at the pole of the spleen and extending as far down as the pelvic brim. Crepitus is felt in

the right wall of the abdomen. On the right side of the body a dead foetus is found lying in part beneath the right costal margin. The head is directed downward, the central portion of the head lying over the usual position of the appendix. This foetus is badly macerated and the skin appears white. Over the left upper forearm a break passes entirely through the epidermis. The scalp of the foetus is torn and through the opening projects the right parietal bone. The umbilical cord is long, yellowish and apparently extremely necrotic. A second foetus is found mainly on the left side.

This second foetus has a black skin and over the scalp and the body, there is scattered a yellowish, granular material that is not unlike iodoform in appearance.

Uterus: the uterus is bound with adhesions and lies beneath two sacs in each of which a foetus was found. On dissecting away the adhesions the uterus is found to measure 12 cm. in length by 8 cm. in breadth at the fundus. At the vagina the breadth was about 4 cm. The endometrium appears somewhat thickened and ragged. Frozen sections show the cells are swollen. Coming off from the upper right side of the uterus is a round tube which measures about 6 mm. in thickness and disappears after running to the right for a distance of about 4 cm. This tube seems to merge with a huge sac that is situated on the right side of the body and which contains the macerated foetus. Frozen sections through this sac revealed necrotic tissue in which, however, no accumulations of pus cells were seen. Above the uterus and to the left is another large sac which apparently springs from the position of the left Fallopian tube. No sign of a left Fallopian tube is observed if indeed it is not represented by this sac. This sac has perforated at its lowermost point posteriorly and the tissues in the neighborhood are soft, edematous and brownish. Sections taken through the wall of the sac at the point of perforation show chorionic villi and innumerable pus cells, as well as connective tissue and smooth muscle tissue.

Case Two.—Mrs. L. H., a widow of two months duration, was seen on February 6, 1922, in consultation with her family physician, Doctor John W. Sneed.

She was twenty-five years of age and was in her fifth pregnancy, at or beyond full term,

having menstruated last on April 8, 1921. Her four former pregnancies were uneventful. Her youngest child is four years old. Three years ago the patient had an abdominal section, with the removal of the appendix and a ventral suspension or fixation of the uterus. Her present pregnancy presented no special feature until she was examined by her family physician two weeks ago, when it was discovered that the fundus of the uterus extended only slightly above the umbilicus, and the contour of the abdomen was abnormal for a woman near full term. The loins protruded, and a rounded mass, thought to be the foetal head, could be felt occupying the left iliac region. Vaginal examination at this time revealed the cervix very high up and to the left. A transverse position was diagnosed, and the patient was told that spontaneous version might occur.

On the morning of February 6th strong uterine contractions began and lasted throughout the day. There had been weak uterine contractions for five or six days prior to this. When seen at her home sixteen miles in the country on the evening of February 6th her condition was good and active labor was in progress. Her abdominal condition was the same as described above. The cervix could barely be reached and was very high in the left fornix. The amount of dilatation was uncertain; the membranes were unruptured; foetal movements were present. External podalic version without anesthesia was unsuccessful, and the gravity of the case seemed to warrant removal to the hospital.

She was admitted to St. Thomas Hospital at twelve-thirty A. M., February 7, 1922. It was thought that with sufficient dilatation podalic version with delivery could be accomplished, hence a Barnes bag was introduced into the cervix, but after three unsuccessful attempts to retain it, it was abandoned. Doctor R. O. Tucker was called in consultation. With some difficulty he introduced his hand into the uterus while the patient was under chloroform, and found the head near the cervical canal and to the left. He advised morphia one-eighth grain and hyoscine one-two-hundredths, and expressed the opinion that the patient should be allowed more time before any operative interference.

The patient rested two or three hours after the hypodermic medication, when uterine contractions began again. Examination at this time (8 A. M., Feb. 7,) showed the abdominal

condition unchanged. The cervix was still very high to the left—in fact, it seemed higher than on the previous examination; and the posterior wall of the lower uterine segment was bulging into the vagina. It was apparent that the line of maximum expulsive force was not directed toward the cervical canal but into the bulging posterior lower uterine segment.

Doctor Charles Brower saw the patient, and concurred in the findings, advising Cesarean section. Dr. Tucker concurred, and considered a Porro-Cesarean section indicated. It was agreed to perform section provided podalic version could not be accomplished.

Under ether anesthesia Dr. Tucker made an ineffectual effort to perform podalic version. He reported there was some sort of thickening or a band in the uterus above the foetal head which absolutely precluded turning. The writer then performed a Porro-Cesarean section, in the course of which the cause of the anomaly became apparent. The uterus was completely folded upon itself anteriorly, and slightly twisted on its long axis, being held in this position by a dense, strong, fibrous band running from near the left cornu of the uterus to the abdominal wall just above the symphysis pubis. This band was about two inches long, one inch wide, and one-fourth of an inch thick, quite evident the result of the uterine operation performed three years before. Whether it was the intention of the operator to perform suspension or fixation of the uterus is not known. The practical result was firm fixation. It was this band which was felt in an attempt to perform version and which rendered it impossible. Porro-Cesarean section was elected because it was thought to offer greater hope of success than simple Cesarean section after the repeated intrauterine manipulation. The operation consumed one hour, twenty-five minutes being used in the attempted version and forty minutes for section. The patient was closed without drainage and made an uneventful recovery.

Unfortunately we were unable to revive the baby. It is obvious that had the condition been fully appreciated in the beginning simple Cesarean section might have been performed and a living child delivered.

Comments;—Case number one is reported because of its unusual features and rarity. Schumann in his monograph on extra-uterine pregnancy states that the growth and develop-

ment of the foetus to full term while still confined within the tube is a rare and interesting termination of tubal pregnancy, which is occasionally recorded in the literature though he had not the good fortune to observe such a case. The case reported seems fairly well to fall in this category and has the additional

feature of a full-term secondary abdominal pregnancy of three years duration associated with it.

Case number two is reported as an instance of the serious consequences which may follow ventral fixation of the uterus in child-bearing women.

THE TREATMENT OF FIBROID TUMORS.*

BY CHARLES N. COWDEN, M. D., F. A. C. S., NASHVILLE, TENN.

MY PAPER is in the form of a question mark, in order that we may get from the combined experience and knowledge of a company of live men, some definite conclusions that will enable us to find out or determine just where we are upon one of the familiar problems that are met with, almost daily, in the routine of the gynecologist. It is almost inexcusable to venture a paper upon this threadbare subject, but the literature that had been accepted by the profession as the last word upon the treatment of fibroids a few years ago, compared with some of the writings upon the same subject today, will disclose a vast change for the better or worse in the handling of these cases.

A note of dissatisfaction or a suspicion of doubt seems to have crept into the minds of the over-zealous enthusiast who is ever ready to carry to extremes any fad or fancy before it has been tried in the crucible of mature experience. It is somewhat difficult to get a line on these men, as some are for it today and reverse their statement tomorrow. A few are still enthusiastic, some have slowed down, some have applied the brakes, and many of them are even back paddling. Then again we fail to record our failures in many instances, for fear of undue criticisms or various other reasons, and much valuable negative information is lost.

I am going to quote freely from the different writers upon this subject without stopping to give any one of them credit. They are all live, up-to-date men, and if you will follow

me closely, you may possibly recognize some of your own theories, experiences or observations set forth in my paper. I claim nothing original at all in it. You may call it a plagiarized article, and it is, but I think that it will serve well my purpose. I only wish to get the subject before you in a manner that will elicit the widest and frankest discussion.

The treatment of fibroids of the uterus a few years ago was one of the procedures upon which the surgeons had agreed. The operation was one of the standardized classics, accepted and practiced by all, after which the word finale had been written. The technique had been refined and perfected to simplicity itself, and the end results both present and remote were all that could be asked for, even in the hands of, I might say, the average surgeon. It consisted of the two procedures; supra-vaginal hysterectomy, and myomectomy in a small number of selected cases. The mortality from these operations was practically nil. One operator reported over one hundred and fifty cases without a death, and the morbidity leaves nothing better to be desired.

Time has only increased our belief in the permanent and satisfactory results to be obtained from the operation, and few if any objections have ever been found against it. It is age-old, time-tried, and perhaps does less harm to the patient than any other cure that has been suggested. It is an operation of election, both as to time and condition of your patient, and much can be done in the way of preparation that will lessen the danger and diminish the post operative discomfort. It affords an opportunity to inspect all the pelvic organs, and determine what is best to do to give radical relief, and also gives an opportu-

*Read before the Tennessee State Medical Association, Memphis, April 12, 1922.

nity to examine the contents of the abdominal cavity if there be any suspected pathology in any of the different organs of the abdomen. The patient freed from all of her pathology, reacts promptly and her convalescence is both rapid and permanent in practically one hundred per cent of these cases; unless some complicating condition exists that can not be remedied.

The organs that are not injured can be left to carry on their function, and tho not functioning normally, they do much to mitigate the menopausal symptoms into which your patient is ushered. Supra-vaginal hysterectomy or myomectomy it seems, has all the elements of success in combating or curing fibroids of the uterus, and the results obtained challenge any enthusiast who is trying to substitute in their stead any new and untried method, or those who have been tested over a limited period of time. I venture the statement that in the whole range of gynecological operations, there is none dealing with an equally serious condition that is attended with so little loss of life; such a small degree of morbidity, with so large a per cent of permanent results, and is fraught with so much satisfaction and beneficial results, to both patient and surgeon, as supra-vaginal hysterectomy for fibroid tumors of the uterus. I believe it has been and is today, the accepted, standardized operation in practically every clinic in the world. This is my position upon the question, and I think it will be a long time before such a tenable procedure will be supplanted or abandoned.

Arrayed against this, is the statement made a few years ago in Atlantic City, by one of our leading men. "That it was a surgical crime to operate upon any case of fibroids." But this statement I think will have to be modified, just as the one that he made in Chicago, "that all cases of cancer could be cured, if he had radium in a sufficient quantity." But he failed to tell us whether it would take a milligramme or a ton.

Again we read a few days ago, a statement from another one of our most prominent men; "that radium as a therapeutic remedy, should be withdrawn from our armamentarium, or it should be used in a very limited field." This leaves us surgeons, who are followers of our leaders, in the midst of a dilemma, not

knowing which way to turn. Between these two extremes, surely there are some conservative opinions and experiences of some of the many operators that will lead us aright; but it seems they have not as yet crystalized their experience into generally accepted truths. After many years of experience with it in the hands of many men; after hundreds of original articles in the medical press, even the monthly issues of some special journals dealing with its wonderful effects; endless discussions; report after report of long series of cases etc., they have failed to fix its value with any degree of definiteness. There are so many things in which they do not agree, such for instance, as to the dosage, time to repeat, thickness of filters, distance from the tissues, individual susceptibility, etc., until we are confused with the multiplicity of formulas and methods. It is just a bit humorous to some of us when the men with one hundred milligrammes or more of the precious element, claim that nothing less will do the work, while the ones with small amounts, claim that it is the small, oft repeated dose that is the least dangerous and most effective.

The man with the larger amount, even claims that these smaller doses oft time stimulates tumor growth and does more harm than good, and the little fellow claims that a large dose causes liquification changes, or true necrosis in the tumor, and these must be taken care of by gradual absorption, while in many cases these degenerative changes are toxic by-products that seriously influence the patient's health. The patient's body becomes a kind of a charnel house to dispose of the debris left over from the effects of the radiated tumor tissues. That this condition is true has been proven many times by a removal of a tumor mass by hysterectomy after the use of radium, and noting the rapid rebound to health that immediately follows.

One class of radiologists claim that under x-ray or radium therapy there is none of the shock that usually attends the operation for fibroids. Another class says that it is often times attended with considerable physical distress, and call it, "Roentgen-Kater," which has been described and studied by many radiologists. It consists of general prostration or weakness, nausea and vomiting, accompanied with headache, palpatation, great nerv-

ousness, and sometimes severe pain. Could you describe shock any better? This condition while not occurring in all cases, sometimes lasts from six to sixty hours, and varies in degrees from mild to a very grave condition, as noted by a few radiologists. Take into account the fact that each series of treatments ordinarily extends over a period of two to five days, and each patient receives from three to ten treatments, and some of them more, it occurs to me that during all these months, filled with the dread of uncertainty upon the part of the patient while taking these radium seances, that it is a great deal more than she would have suffered from a radical operation attended for a few days even with a violent reaction, which is not often the case, as can be verified by all operators.

Some radiologists claim that patients suffer no inconvenience whatever; but the fact is, most of them suffer some kind of discomfort or distress either in making the application or from its affect, and perhaps more than one-third of these cases suffer inconvenience for a period equivalent to or in excess of that experienced from a laparotomy. Then after all these treatments, extending usually over a period generally of many months, the important question arises, is the tumor cured? How can you tell when you have effected a cure? All of the most enthusiastic radiologists except one, only report cures in from 46.4 up to 56.2, while one claims 83 per cent cures. What constitutes a cure? Is it only sufficient to control the hemorrhage to call it a cure, or is it only necessary to stop the growth of the tumor, or should we be expected to cause it to disappear before this claim can be made?

They tell us it is successful in a large number of myoma cases, by causing a permanent amenorrhea, and in many of the cases it will cause a shrinking of the tumor. One radiologist, in a series of three hundred and eighty cases, the size of the tumor was noted with the following results: Reduced in size, but not to normal, in fifty-seven per cent; marked reduction in thirteen per cent; entire disappearance of the tumor in only five per cent; unaltered in twenty-one per cent; and in five cases the tumor actually increased in size.

In another series of cases reported, examined in from three months to two and one-half

years after treatment, there had been a reduction in the size of the tumor, varying from complete to almost complete disappearance, in eighteen per cent of the cases, and to one-half of the original size in nearly fifty per cent of others, leaving about thirty per cent with no decrease in size, and a few cases had actually increased. All these cases may be symptomatically cured and give no further evidence of their presence, but I believe that I would have a difficult task to convince the patient of the fact, when she could herself feel the tumor mass, although it was very much reduced in size and gave her no discomfort whatever. The psychology of the thing would be enough to make an invalid of her, as she would live in mortal apprehension or fear.

Just how the radium brings about these retrogressive changes, is not altogether settled. Does the ray have a direct selective action on the myoma tissue or cells or is the chief influence exerted by the degenerative changes in the ovaries? Radiation of the pelvis, as believed by most of them, does affect the fibroid tissues and the endometrium to a slight degree, but diminution of the tumor and the cessation of the hemorrhage is brought about largely through the effects upon the ovarian tissues. This results in a state of complete cessation of the hemorrhage which is brought about largely through the effects upon the ovarian tissues, and which results in a state of complete cessation of ovarian function. The ovary atrophies and perishes away and the patient is at once plunged into the midst of all the bizarre and protean manifestations of a premature menopause; just as if a complete ovariectomy had been done. That control of hemorrhage and reduction of tumors comes only after the establishment of amenorrhea, has been noticed by all.

Here surgery conserves the ovaries, or at least one of them, even a small piece of one whenever possible, and this is found to be possible in at least one-third of the cases. In some of these, myomectomy followed by child-bearing, is vouchsafed to the parent, and even a faint hope of a possibility of becoming a mother in the future is exceedingly gratifying to them. Castration, by destroying all of the ovarian tissue, is nothing short of a calamity in any woman's life; for when it is

done, she realizes that her wonderful reproductive organs are not so vitalized and attuned, so fit and perfect, that they respond to the most subtle influence that ever swept through the soul of human kind, in the ecstatic, overwhelming delight in the mysterious fulfilment of nature's first law,—the crowning glory of her mission here upon this earth. Radium does this for her in every case before it begins to affect only in a slight degree the tumor mass. The surgeon sometimes has no other alternative, but it is always done after a careful search for some small piece of normal ovarian tissue that can be left.

One point upon which they nearly all agree and most of them emphasize, is to the contraindications to the use of radium in the treatment of fibroids. The tumor must be small and not of rapid growth, uncomplicated and not associated with any coincident inflammatory disease of the appendages or any cystic tumors of the ovaries. One or two enthusiasts on the other hand, assert that radium may be efficient in the treatment of pyosalpinx or pelvic infections.

Lateral pain in connection with fibroids, suggesting either inflammatory conditions or pressure upon neighboring organs, is also a contraindication to its use. Early malignancy, and that is not an unheard of complication, constitutes a very decided drawback to radium therapy, some claiming as high as seven per cent of myomas exhibit malignant degeneration. One writer reports a case of a fibroid that has been treated four years with radium.

They lay special stress upon a correct diagnosis of these cases, and insist that these cases should be carefully selected: but who among us can make the diagnosis? In a series of three thousand and five hundred cases, associated diseases were found in more than one-third of them, including degenerative changes in the tumors, a multiplicity of lesions of the appendages, and in a few malignancy. Another reports five hundred and one cases, in which were found four hundred and five patients with ovarian cysts, abscess of the broad ligament, tubo-ovarian abscess, pyosalpinx and ectopic gestation, in none of which could the radium have possibly cured the trouble, and in practically all of which, failure to correct the lesions would have resulted in per-

manent disability to the patient or the loss of her life.

If we will all go back for only a short period in our daily work we will recall many gross errors in pelvic diagnosis and many of the unsuccessful cases in radium therapy they claim are based upon incorrect diagnosis. I want to state if the tumor has existed for any great length of time, or has grown to be of any great size, there will be only a few that will be free from some of the associated complications enumerated. This leaves only an exceedingly small percentage of the cases that are amenable to the radium therapy, taking their own contradictions as a guide.

An important after result that is sometimes noticed is a possible continuation or a reappearance of the bleeding. This bleeding may appear within a few hours after the removal of the radium and may persist for days and sometimes weeks. The amount varies from a steady profuse flow to a scanty occasional showing. One radiologist claims to have encountered this troublesome bleeding in a great many of his cases and some of them continue from two to six and eight weeks. This treatment is sometimes followed by a profuse, irritating leucorrhoeal discharge. It is usually where the radium has caused a complete cessation of the hemorrhage. It also continues for weeks and months, and no kind of treatment seems to influence it in any way. The discharge becomes foul and chemically irritating and soon results in an annoying vaginitis and is slow to yield to treatment.

To a nervous, apprehensive patient who has not been previously forewarned about these possible conditions, and confidently expecting an instantaneous cure, the continuation of the bleeding or the appearance of the profuse leucorrhoeal discharge, comes as a distinct disappointment to her, and the doctor finds himself in an embarrassing predicament in explaining away the cause of the situation.

Another point of the question to be reckoned with is the many and varied complications that sometimes attend its use. Sometimes the hemorrhage is not controlled: severe pain, proctitis, rectal tenesmus, diarrhea, vesical tenesmus, cystitis, narrowing of the vagina, burns, fistulae, skin irritations, ulcers that require long months to heal, and some late results such as untoward pathological changes in the

blood, or a development of a state of extreme nervousness. All have from time to time been noticed by the different observers, and occur quite irrespective of the question whether the tumor has or has not been cured.

Then after all, we have to consider the effects of the presence of a mass of mutilated degenerated tumor tissue that is left in the pelvic cavity. It is too short a time since the beginning of the use of radium in these cases to forestall the final chapter as to its remote effects, and time alone can solve it. The question naturally arises, if a patient is not better off without a uterus or with only the cervix left than she would be with the remnant of this organ that had been entirely burned away or destroyed, and left in her pelvis for some possible unknown future pathological developments. It seems to me, we are leaving behind some very undesirable tissue that might give no end of trouble at some time in the future.

In view of all these facts, obtained from the experience of the men who endorse the use of radium for the treatment of fibroids, in comparison with the definite results that follow hysterectomy, what are the conclusions to be drawn in respect to their individual merit. Should they be as adjuncts, one to the other, or are they rivals for supremacy in the treatment of benign growths? Is there a certain type best suited to one or to the other method? If so, what are the definite indications or contraindications for their use? Has the investigator in the use of radium become so expert that he can say with definiteness, that here is a case that should be treated with radium, and that this tumor of such a size and bulk, should have so much dosage, at different times, and you get as certain results, and as little morbidity as you can expect from a hysterectomy. Until this can be done, I think the place for radium in this field is very limited if not questionable. The possibilities of radium for real harm have not been sufficiently exploited in the literature, because men shrink from reporting their bad results: therefore, it is the duty of these men who are using radium to spread the propaganda of caution, and insist that only men of great experience in handling it should use it. From the literature upon this subject, I am far from being

convinced. Radium and x-ray have only a limited place in the treatment of fibroid tumors.

I would have you remember in your discussion, that my paper is upon fibroid tumors, and not upon myopathic hemorrhage or malignancy.

DISCUSSION.

DR. FRANK D. SMYTHE, Memphis.—I appreciate very much the compliment of having been designated by the Chairman to open the discussion of the very interesting paper read by Dr. Cowden, and to say that the Doctor has expressed my views in regard to the best method of treating fibroid tumors of the uterus better perhaps than I could have expressed them myself, had I been requested to submit an essay on the subject of fibroid tumors of the uterus. The subject of this paper was, if I remember correctly, "The Best Method of Treatment of Fibroid Tumors of the Uterus," and not a method of the treatment of the symptoms of fibroid tumors, for which radium is perhaps too often resorted to.

A fibroid tumor of the uterus, one that is producing symptoms is a fibroid tumor that should be removed by a surgeon. It is truly a surgical lesion and only a finished abdominal surgeon can effect its removal with certainty and with a degree of safety that forbids other procedure but little, if any place, in the treatment of the disease.

The chief contraindication for the employment of radium in the treatment of fibroid tumors of the uterus is that some physician, who is not a finished surgeon, has invested a good deal of money in radium, as radium can be applied by one who would not be considered an accomplished surgeon. I have money invested in radium myself but have thus far failed to find a case of fibroid tumor of the uterus where I thought the interest of the patient would be promoted by its use. The fact that the results from the treatment of cancer of the neck of the uterus with radium have been more satisfactory than any other method hitherto used by no means justifies the substitution of radium for the scalpel in the hands of the surgeon when treating fibroid tumors of the uterus.

The dose of radium evidently has not been agreed upon by those who prefer to treat fibroid tumors with radium. The man who owns or controls a large amount of the element insists that large doses are essential in the successful treatment of the disease, and that where failure occurs that failure is often times the result of an insufficient use of radium over a sufficiently long time; while the man with a small amount of radium reports that it is his opinion that smaller amounts properly and timely applied to equal to, if not superior, as a method of treatment than the larger doses.

There is no doubt in my mind but what certain diseased conditions of the uterus can be successfully treated with radium by those who are expert in its use and who have had large experience with its use in the treatment of said diseases. However, I do

not believe that a patient with a fibroid tumor alone is a case that should be referred to a radiologist. Such cases are cases for the gynecological surgeon. My experience has been rather large and I have made a very careful study of the subject of fibroid tumors of the uterus and have been brought face to face with practically all the complications incident to fibroids, and I am sure that the surgeon is doing the best that can be done for his patient with fibroid tumor of the uterus when he shall have removed the tumor and conserved the ovaries and the uterus also, especially during the child-bearing period, whenever it is possible to do so. It is true that in cases of malignancy, associated with fibroid with serious degeneration and infection of the ovaries coexisting, that we are compelled to remove the ovaries and tubes when operating for fibroid tumors of the uterus. But one can not emphasize too emphatically the importance of conserving the ovary, or ovaries, in operating for fibroids when it can be done with safety. The value of conservation to the woman can hardly be estimated because it is so immense. We have records of many cases where the woman has been subjected to the operation of myomectomy for fibroids who have had one or more children after the operation had been performed. The successful treatment of such a case of fibroid tumor of the uterus by radium, if prolonged, would have in all probability resulted in sterilization of the patient. And that is something that should never be done if the disease can be successfully treated without having to do so.

Fibroid tumors of the uterus are characterized by slowness of growth. They are generally multiple and often complicated by infection and degeneration, and about five per cent become sarcomatous or have a coexisting carcinoma.

The mortality of myomectomy, supra-vaginal hysterectomy or pan-hysterectomy, where the operation is performed by a finished pelvic surgeon, in the absence of severe complications, is so slight that the risk incident to the operation might hardly be considered as a contraindication to its performance. I do not believe that the mortality following the operation is any higher than the mortality resulting from the use of radium in the treatment of fibroids. We do know, however, that when the tumor has been removed, or when hysterectomy has been performed that the patient is kept in the hospital but a short time and that her erstwhile tumor is a thing of the past. Hemorrhage, pressure and other symptoms completely disappear and the same can not be said of patients treated by radium in a large per cent of cases.

I do not believe that a patient whose kidneys and heart are in condition to undergo operation with safety should be denied the benefit of an operation by being referred to the radiologist for treatment, and I believe that it is our duty to checkmate the propaganda which is being spread broadcast concerning the treatment of fibroid tumors of the uterus by a method which is certainly in the experimental stage when we have a method which has been de-

veloped by us in the treatment of this disease, which is attended with almost uniform success so far as a cure is concerned and with a mortality rate that is less than the mortality rate of fibroid tumors alone if left unmolested.

I am very glad indeed that we have had the privilege of hearing Dr. Cowden read his paper and am glad that we have in our profession men like Dr. Cowden who have the courage of their convictions and who are able to present evidence so fully justifying the position for which he is contending. The time has not arrived when a patient with fibroid tumors of the uterus can with safety to herself exchange the gynecological surgeon for the radiologist.

DR. E. DUNBAR NEWELL, Chattanooga.—I am very glad Dr. Cowden read this paper. He is an honest, straight-forward man who believes sincerely in what he says. However, it is very evident Dr. Cowden has not used radium very much.

We have been using radium in our hospital for six years. We have been treating and removing fibroid tumors of the uterus for fifteen years by operative procedures. We are still removing these tumors by the knife, but we are likewise getting some wonderful results from the use of radium in these cases.

Whenever there is a new means or method of treatment brought forward in medicine and surgery, there is always more or less criticism, and it is only natural that there should be adverse criticism. If the medical profession adopted quickly all the new things presented to its members, we would be in hopeless confusion. We are conservative. All of us who are familiar with medical history realize and remember how new methods of treatment have been fought. We all remember how Lord Lister was fought in his work, how he was condemned and ridiculed, and we must expect radium to pass through the same stage. It is very fortunate that the men who are using radium in the majority of cases are surgeons. I think surgeons should use radium. I think that, as a rule, the surgeon is the only one who is competent to use radium. Radium cannot be used indiscriminately. Radium can do harm, if improperly used. It is just as important for the man who is to apply radium to know how to use it as it is for the surgeon to know how to use the scalpel. I always preface my remarks by saying that radium is doing a great deal of harm, and it can do a great deal of good.

As I have previously said, we have been using radium for six years. Radium is not indicated when we have a fibroid tumor of the uterus complicated by inflammation of the pelvis, or for other reasons where we suspect any other condition than a simple intramural fibroid. Radium does not seem to have much effect on the subperitoneal types of fibroids. Myomectomy should be done in these cases. In submucous fibroids radium does not seem to have much effect. Hysterectomy is usually indicated in these cases and is performed by the men who are accus-

toned to use radium.

When we come to the classic cases in which radium is used, the intramural fibroid of an extent not larger than four or five months pregnancy, there is nothing more spectacular than the relief of this condition by radium. Radium should be used in cases of intramural fibroids. The patient does not receive any shock, because the radium is placed within the uterus. It is not placed within the vagina. You do not have the symptoms which Dr. Cowden referred to the same as you do when you are treating cancer of the cervix. There you get irritation of the rectum, irritation of the vagina and bladder, but you do not get these symptoms in the treatment of a fibroid tumor of the uterus when the radium is placed within the uterus.

Let us suppose it is your wife who has a fibroid tumor of the uterus, and that you have diagnosed an uncomplicated intramural fibroid the size of a grapefruit. You know that patient will not be in the hospital for more than 26 hours. It will not be necessary for her to take an anesthetic. A little capsule of radium is introduced gently and the patient kept in bed about twenty-four hours. She is able to go about the next day. She receives three treatments; she does not have practically any reaction, and the tumor within five or six months disappears to such an extent that you cannot find it at all. Would not any of you rather have your wife take that treatment than to resort to operation? I am sure you would.

We have had a number of cases that were completely relieved so far as the symptoms and size of the tumor were concerned. These patients we have followed for six years, and they were not in the hospital more than twenty-four or thirty-six hours.

When the doctor says that the ovaries are affected by the use of radium, I think he is mistaken, because radium rarely affects more than five centimeters distant, and the ovary is situated at a greater distance than five centimeters. We can take these cases of metrorrhagia and menorrhagia, and apply radium sufficiently to affect the endometrium, and they menstruate normally, and some recent extensive experiments show that unless radium is carried on to an unusual extent, something else besides the fibroid is rarely affected, that is, the ovary is not destroyed. The principal effect of the radium is on the endometrium and tumor itself. So, after all, you have to use judgment in applying radium. It is important to know how to use it, and how to place it, and it is likewise important to know how many milligram-hours to use as it is to know how to take out the gall-bladder. I regard it as criminal for a man to use radium unless he knows how to use it carefully and is familiar with the literature on the subject. The time is coming when you gentlemen will want your wives, if they have fibroid tumors of the uterus, to have the advantages of the use of radium in the treatment of these tumors of the uterus.

DR. S. H. HODGE, Knoxville.—It would appear that a very serious indictment has been brought

against radium from hearing Dr. Cowden's paper. I want to assure you that if you will examine carefully what he has said, it is not an indictment against inefficiency and against the improper use of radium by men who are not well informed in its use. If you followed the paper carefully, you must have seen that from beginning to end.

In the use of radium a man must become proficient. He must have had some experience in a surgical way and know what he is doing before he can be considered a radiologist. The same applies to a surgeon. You cannot hand a man a scalpel and make a surgeon of him; you make an operator.

There has never been an advance made in any line of work but what it has been condemned very severely. When surgery reaches the point that it is absolutely perfect, that it has no drawbacks, and reaches the stage of perfection where it is not capable of being criticized, then the situation is hopeless.

Perhaps a great many of you saw in medical journals not a great while ago where Dr. John B. Deaver brought a serious indictment against radium when he made the statement that nothing can be expected from radium in the treatment of cancer. That statement was spread broadcast over the country. Dr. Deaver had had no experience with radium. Some of you older members may remember that about twenty-five years ago, when the question of the leukocyte count was brought forward, Dr. John B. Deaver and Dr. John A. Wyeth entered into a notorious discussion on the subject of the leukocyte count, from a diagnostic standpoint. Dr. Deaver has been very radical and has attacked every progressive method that has been put forward in the surgical world in the last five years.

Dr. Cowden, in his paper, has really made a very strong indictment against the improper use of radium. When it comes to leaving a uterus in a patient that has been scorched and burned and charred, as he described, it is not radium treatment. That is the abuse of radium. For any man to say that radium has no place in the treatment of uterine fibroids is just as absurd as to say that surgery is the only treatment. In all of these cases there is a middle ground, and radium certainly has its place. On the other hand, for a man to undertake to treat all cases of fibroids of the uterus with radium is equally absurd. They tell you that from 6 to 9 per cent. of these fibroid tumors become malignant or undergo malignancy. The Mayo statistics of over 4000 cases show only 75 cases that underwent malignancy.

Dr. John G. Clark, an eminent gynecologist, whom most of you know, reports over 900 cases in which sections were made in each and every one, showed less than 4 per cent. of malignant changes, and he diagnosed 3 per cent. of them clinically before treatment was given. If you take your histories carefully and if you have the knowledge and skill that you should have, if you are using radium, the vast majority of these cases will be correctly diagnosed and the patients will be cured.

DR. L. E. BURCH, Nashville.—The severest arraignment I have heard against radium was made by Dr. Cowden, and yet the title of his paper ends with a question mark. It is only by a free discussion and the elimination of personalities that we can arrive at a sane and safe conclusion. Radium is a new agent. It is something that no one knows a great deal about, and yet it is of wonderful therapeutic value.

We must remember that fibroid tumor of the uterus is the most common of uterine tumors; that 45 per cent. of women who reach the age of forty-five have a fibroid tumor. The majority of these tumors are small and never give any symptoms. But the point about it is this: if 45 per cent. of women have fibroid tumors, small though they are, it shows that after the menopause even those tumors that remain are still there, and nature is able to handle them in some way. I want to say that surgery is my game; it is the only way on earth I have of making a living, but if the radiologist can give us a better means of curing patients, I am going to meet him half way and give him my cases. At the present time there is no need of displaying a great deal of feeling about this matter.

As the doctor stated, who just preceded me (Dr. Hodge,) radium improperly used and used in poorly selected cases is capable of doing great harm. At the present time, so far as we know, there are only about 10 or 15 per cent. of cases in which radium should be used, but if you do not use it in these 10 or 15 per cent. of cases, in my mind you are making a surgical blunder. The question is in what cases should radium be used, and in what cases should an operation be done. If you have a young woman and can avoid using radium, by all means do it. In this class of cases myomectomy is the operation of choice, for the simple reason that it preserves the reproductive function. Again, radium should never be used where you have a degeneration, where you have an inflammation of the tubes or ovaries. That eliminates a large class of cases in which radium cannot be used. Again, radium should not be used in the case of a large tumor; it should only be used in tumors that have a diameter of 10 cm. If you get a tumor larger than that, radium should not be used. Radium should not be used in the submucous tumors, but if you have a small tumor in a woman of forty, free from complication, whose uterus is moveable, that patient should have radium treatment and not an operation. Radium treatment is easy and simple. There is no great reaction from its use. As Dr. Newell stated, it is much easier to take your patient in the treatment room, without an anaesthetic or a dose of morphin, introduce the radium, and leave it there for twenty-four hours or more. There is no pain attending its use, and that will end the tumor for good and all.

DR. HOWARD KING, Nashville.—I think the purpose of this paper and the intention of it are good. However, some of the statements made in it ought not to go unhallanged by the radiologist. The abuses

of radium are many, but I think if you will take the work of the average surgeon, good, medium and bad, he has had results and a high mortality following operations for fibroma of the uterus. Many times I have seen the ureter cut, the bladder ruptured, or the rectum torn in the case of a certain operation, and you know what results follow such a thing as that. To start out with, every surgeon is bound to admit that there are a certain number of women who have uterine fibromata that, from the standpoint of risk, are inoperable. What are you going to do with these? Will radium do them any good? Anybody who has studied the question knows that argument on that point is useless. We know radium does good in these cases. It cures a certain percentage of them; it stops hemorrhage in all, and reduces to a certain degree the size of the fibroid tumors.

There was a good deal of confusion of methods in the beginning in the use of radium. The amount of dosage needs to be criticized, and has properly led to the criticism offered by the essayist. In my opinion it is just as absurd for a radiologist to claim that all uterine fibromata should be treated by radium as it would be for a surgeon to say that no uterine fibroid tumor should be treated by radium; but because of the fact that some so-called or would-be radiologists, or surgical radiologists, have not yet learned what little we know about radium and its method of application and have abused its uses so as to bring about all this criticism, it is hardly fair to say that radium has no place or a very limited place, as the essayist would lead you to believe, in the treatment of fibroid tumors of the uterus. The essayist made an inconsistent statement when he started out by saying that a small or large dose, or whatever kind of dose is applied to these tumors, would hardly accomplish anything; that is, it would have no beneficial effect. When he winds up it is pathetic to observe that he says the radium exerts a beneficial influence on these tumors. These statements are notoriously inconsistent.

DR. O. S. McCOWN, Memphis.—We do not like to give up the things we have always taught were good and really entirely satisfactory. There is no work I have done in medicine or surgery that has been as satisfactory to me and to my patients as the surgical management of fibroma of the uterus. My idea of the origin and desire for radium in the treatment of fibroids comes largely from the natural hesitancy of any person in undergoing a major operation. The general belief among the laity and among the profession is that radium is a conservative measure; that they are avoiding a major operation.

In the last issue of *Surgery, Gynecology and Obstetrics* there is an editorial by Dr. Mayo in which he says that the radium treatment of uterine fibroids is the most radical treatment so far advocated. I think we should meet every new proposition with a receptive mind and be willing to weigh the evidence, and if something better is offered to adopt it. So far, I am

far from convinced that radium will in any measure supplant surgery in the treatment of fibroid tumors of the uterus, or give results in cases in which surgery is a failure.

DR. C. N. COWDEN, Nashville (closing).— I have been accused, gentlemen, of bringing a severe arraignment against the use of radium. I want to tell you that I have quoted largely from the men who have written on radium and who are making the history of radium. Every word in my paper has been taken from the writings of men who are using radium. They are the ones who have given me all information on this subject. You cannot get away from the fact brought out by Dr. Mayo, whose editorial was referred to us by the last speaker. In radium you are using a destructive agent. It has the most radical effect you can get in the pelvis, and I believe, without exception, none claim a reduction in the size of the tumor until you have destroyed the ovary. You have brought about a permanent amenorrhea, and then you get the effect of the diminution of the tumor from the use of radium.

As to the 10 per cent. of cases that are amenable to treatment as brought out by Dr. Burch, those are the cases that should be myomectomized. The tumors are usually small; there are only one or two of them, and in a stage when you can do something for the

patient, and they are the ones that should be subjected to myomectomy.

Dr. Newell informs us that it is an easy matter to slip a capsule of radium within the uterus, and in a few days the patient is well. I wish to say to Dr. Newell, that he has not affected anything in that pelvis until he has affected the ovary, and in a patient of that kind you have robbed her of one of the greatest things in her life. You cannot preserve the function of the ovary and affect the tumor, if I have a correct idea of the opinion of those men who have written on this subject. You have to affect this tumor through the destruction of the function of the ovary, and that is the plea I am making. The surgeon can leave the ovary in nearly 50 per cent. of these cases. In a large majority of them, I should say more than 75 per cent., you can leave enough ovarian tissue that will keep the patient from undergoing all of those manifestations peculiar to the menopause. Whenever you tell these patients that you are preventing them from undergoing a mutilating operation, you are overstating it. You are mutilating them in a way they will never get over. Considering the splendid results we get them from surgery in the treatment of fibroid tumors of the uterus, I am convinced that radium has a very small field of usefulness in these tumors.

THE THYMUS GLAND.*

BY KINSEY M. BUCK, M. D., MEMPHIS, TENN.

Report of a case of Thymic Asthma.

THE theories regarding the functions and pathological conditions of the Thymus Gland are so many and varied, that no attempt will be made to cover them all. This paper was written chiefly to report a case of a pathological thymus, which occurred in a newly born child and which responded nicely to treatment.

A pathological thymus is one that produces symptoms. Whether these clinical manifestations oftentimes referred to as "thymic asthma" are due to a lack of, or an over activity of a specific substance of the thymus, or whether they are due to compression by an enlarged gland on certain vital organs, we are unable at this time to say. A marked hyperplasia of the thymus gland seems to be the cause in many instances of a marked dyspnea, cyanosis, stridor, convulsions, prostration and oftentimes death. In the newly born, F. Henke says that the condition is often one of "Status-Thymicus," due to a congenital anomaly, and that the symptoms are not produced mechanically, but are due to a disturbance of the internal secretions.

Hyperplasia of the thymus seems to be closely associated with an old "bug-a-boo" "Status Lymphaticus." Paltouf says that Status Lymphaticus is characterized by an enlarged thymus, hyperplasia of the lymphoid tissues, narrowing of the vascular system and a tendency to sudden death. According to Paltouf's view, death in these cases is not due to mechanical compression, but is dependent upon a constitutional anomaly of which the thymus is only a part. The "Status Lymphaticus" child has a characteristic type of constitution, as a general rule. They are usually slender, graceful, delicately molded and blue or brown eyed, with soft hair, and transparent skin. The negro though is said to be more often affected than the white race.

Such a child we usually find has a very low resistance, with an unstable equilibrium of the vital forces, and is often killed by trifles, such as antitoxin, anesthetics, while in swimming, or from a spinal puncture, or the like. These children are especially susceptible to influenza, typhoid fever and meningitis.

There seems to be some relation between the thyroid and thymus, because they are usually both enlarged simultaneously. Idiopathic epilepsy, is common in these cases. Cerebral hemorrhage is of frequent occurrence. They are especially subject to Chlorosis, Caisson's disease, drug addiction and suicide.

Hammen gives the weight of the thymus at birth as 13.2 grms. while Kerley in his new book gives the average between 6 and 7 grams but both mentioned the fact that any thymus weighing over 15 grms. could be considered as abnormal. In some cases of so-called thymic death, the weight has reached 55 grms. The width of the thymus is 2 to 3 cm. and its longitudinal diameter $11\frac{1}{2}$ cm.

The thymus consists of two lobes which are more or less pointed at the upper part, and rounded off toward the lower. The greater portion of the gland lies behind the manubrium and body of the sternum, but the sides and lower portions are covered by the folds of the mediastinum, and are forced away from the chest wall by the anterior borders of the lungs. The thymus covers the pericardium and the beginning of the great vessels posteriorly, and also reaches down to the pulmonary veins. The upper pointed edges of both lobes cover the trachea. On the sides the thymus is bounded by the innominate veins and common carotid arteries, the vagi and phrenic nerves. Back of the lobes and in front of the vertebral column are found the sympathetic nerves. Situated in such a vital spot, it is no wonder that so many theories and deductions have been made regarding its mechanical compression on the different organs and parts with which it comes in contact.

The real and true function of the thymus is not clearly known. It is generally conceded however that the thymus has an inter-

*Read before the Memphis Pediatric Society.

nal secretion. It is believed that it plays a part in the formation of bone, and possibly the blood, and regulates blood pressure. It is supposed to be a factor in the development of goiter, and has some influence in the growth of the sexual organs and nervous system, and that it can secrete a toxin that may cause sudden death in the lymphatic diathesis, is the general belief.

In diagnosing "Thymic Asthma" in the newly born it must not be confused with congenital heart disease, sepsis, tetanus, atelectasis, pneumonia and central hemolyses. I think in the past, death due to an abnormal thymus has been laid at the door of one of these conditions. The symptoms of "thymic asthma" vary greatly in intensity, and sometimes produce death immediately, while at other times, proper treatment instituted immediately would bring about gratifying results.

The chief symptoms of "thymic asthma" in the newborn, are dyspnoea, stridor and cyanosis, which may or may not be accompanied by convulsions. The spells of cyanosis come on at frequent intervals, and the baby at this time is in a pronounced state of shock, with shallow, irregular respiration, and a thready, feeble pulse.

The diagnosis of hyperplasia of the thymus is made by the symptoms, by percussion of the gland, and by the x-ray. The percussion of the enlarged thymus in the newly born is extremely difficult, and the percussion note in older children may be confused with that caused by enlarged bronchial glands. In percussion for a thymus, the patient should be placed on a firm table, the arms clasped about the head, the head held in semiflexion, and the body maintained in the median position. Use a very light stroke, and go more by tactile sense of resistance, than the sound. Determine the mid-sternal line, and use the "Threshold Method" of percussion. The percussion is negative if there is no dullness, or if it extends no more than $7/8$ inch to left of mid-sternal line in the second interspace, and not more than $1/2$ inch to the right.

Anything over this is supposed to indicate an enlarged thymus, especially if the dullness is continuous with the cardiac dullness below. If dullness is noted, and it is due to an enlarged thymus, it will disappear on putting the head in extreme dorsal flexion.

The x-ray to my mind is a much better way to diagnose a thymus, and all doubtful cases should be x-rayed where the symptoms point strongly to a "status lymphaticus." X-ray treatments should be given at intervals, depending on the severity of the case. At present, the x-ray is the best agency we have for combatting this condition.

Report of Case:

Diagnosis, Thymic Asthma.

Baby D; Age 14 days. Color, white, Development fair. Breast fed. Stools, normal.

Had been apparently a normal, healthy baby for the first 14 days of life. Cord came off nicely, without infection. Nursed well. On the 14th day started having spells of marked cyanosis, with serious signs of shock. These attacks grew steadily worse during the day and while attack was on, would lay as if dead. The respiration would drop to about ten or twelve to the minute. The pulse at the wrist could not be felt, and the heart action was slow, and the skin an ashy grey. The duration of the attack would vary, usually lasting, however, several minutes. Between attacks the baby appeared normal. The heart and lungs were normal. It had its first attack about 9 o'clock, and I saw it about 2 P. M. the same day, and during that time the baby had grown steadily weaker, and it looked as if each spell would be his last. A diagnosis of hyperplasia of the thymus was made, and x-ray treatments advised. Twenty-four hours after the first treatment the baby was greatly improved, and had only two attacks of cyanosis during the last six hours. Two more treatments by the x-ray were given at 24 hour intervals, and the patient made a complete recovery.

REPORT OF OPERATIONS FOR CANCER OF STOMACH; STONE IN BOTH KIDNEYS AND BLADDER; GANGRENOUS APPENDICITIS AND INTUSSUSCEPTION.

BY WILLIAM D. HAGGARD, M. D., F. A. C. S., NASHVILLE, TENN.

THERE are so few cases relatively of cancer of the stomach which have been successfully operated upon and had a five-year cure that the following case is reported. It is not so unusual that there are five-year cures for cases of cancer of the stomach because in the best hands about twenty-five per cent are alive and well at the end of five years after operation, but operation for cancer of the stomach is so rare compared to its frequency. It is estimated that one man in every forty-five who reaches the age of 45 dies of cancer of the stomach. The difficulty of course is not in the diagnosis of the disease but in its recognition before it is too late for surgery to be effective. A certain per cent of cases will come up suddenly, advance rapidly and elude diagnosis early enough for operation to prove effective. The majority of cases of cancer of the stomach are preceded by a long and well recognized clinical history of ulcer. As prevention is so much better than cure, all cases of gastric ulcer should be recognized as such and cured by timely operation before they degenerate into cancer. All gastric ulcers do not degenerate into cancer, but it is pretty definitely established that the great majority of cases of cancer of the stomach develop on an ulcer. Even if the case is not recognized during the many years in which it has manifested itself as an ulcer, it should be properly suspected and investigated to the full to show cause why it is not cancer as soon as there are definite gastric symptoms. The x-ray is so definite in these cases now that we ought not to fail to utilize it in patients with gastric distress. It is opprobrious that so few of these cases that were operated upon yielded 100 per cent mortality are recognized and operated upon with any degree of frequency. Where a man has an attack of pain after eating, with or without vomiting, with or without blood, that does not yield to the usual

remedies that he has been taking for his ulcer, then cancer should be suspected and definite pathology either proven or disproven.

The following case is interesting:

Case No. — Mr. G. H. S. male, 44 years old and a farmer by occupation. There had been no tuberculosis or cancer in any members of his family. He gave a history of having typhoid fever nine years ago and lues twenty-four years ago. He had never been operated upon. His present history began eighteen months ago. At that time he began to have nausea and would vomit up bile before breakfast. Vomiting gave him relief. After a few months he began to have a dull, aching pains in epigastrium from one to four hours after eating, usually when his stomach was empty. This seemed to be relieved for an hour or so by taking food. He had sour stomach, belched up gas and spat up his food at times but vomiting was only occasionally. Such attacks would be free of all symptoms for a similar period. During the interval he could eat almost anything without discomfort but during an attack could not eat anything without pain. In the fall of 1916 the vomitus was reddish at times and at others it was like coffee grounds. His physician advised operation. He got better, however, and decided to wait. The following spring he had a very bad spell. Epigastric pain was much worse and his stomach seemed very sour but again the symptoms seemed to subside. During the last month the pain had been much worse than ever before and he got very little relief by taking food. During the night when the pain was bad, drinking water seemed to relieve him slightly. The pain in the epigastrium was dull aching in character, and did not radiate, and seemed to locate in the left hand of the epigastrium. At present he rarely vomits. He has passed blood in the stools, more or less bright red in color. He has lost twenty pounds in weight and about 50 per cent in strength during the past

year. There was no cardiac or respiratory symptoms, and no urinary disturbance. Three days before I saw him he had been examined by Dr. J. A. Witherspoon who advised an operation for gastric cancer.

The urinalysis was negative. The Wassermann reaction was negative. There was nothing remarkable or diagnostic in the physical examination.

X-ray examination: A constant defect in the pyloric end of the stomach was shown which lead Dr. Floyd to make a diagnosis of carcinoma 80 per cent, lues 20 per cent.

The patient was operated on August 27, 1917. At operation a carcinoma was found involving the lesser curvature of the pyloric region. (Fig. I.) A few glands were found along the greater curvature half the way up to the esophageal opening. The pyloric end (one-third of the stomach) was resected with the growth and the divided end of the stomach was sutured to a new opening made in the jejunum on the same principle that a gastroenterostomy is done.

The microscopical diagnosis was adeno-carcinoma.

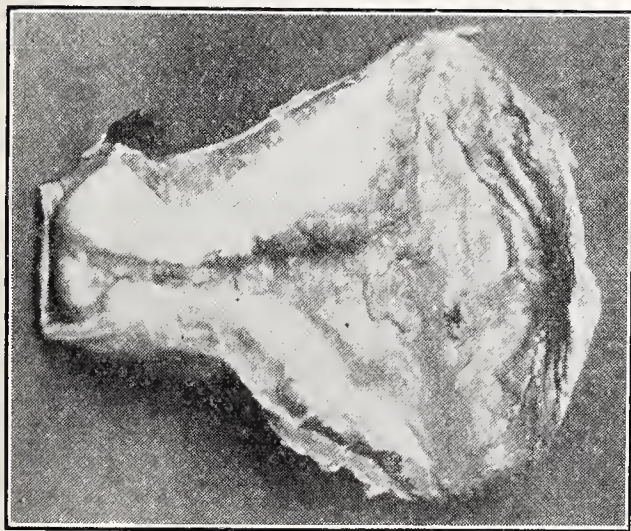


Fig. I. Two-thirds of a Stomach. Resected for Carcinoma. Interior view; laid open along lesser carvature. Duodenum at left. Note thickened white, carcinomatous wall.

Patient had only a slight reaction to the operation and the post-operative convalescence was uneventful. Following his operation, he had four x-ray treatments. He returned again February 24, 1920 and was given a bismuth meal and x-rayed. Both the plates and the screen showed the stomach to be working in a most satisfactory way. At present he is alive and well.

STONE IN BOTH KIDNEYS AND BLADDER.

Case. No. — Female, age 38, had been married 17 years. She was the mother of eight children, the youngest child being four years old. The family history was negative. The patient stated that she had never been very strong. Her menstrual history was normal. She had had tonsilitis and malarial fever. She had never been operated upon. Her present history began thirteen years ago, when she had two attacks of severe, constant pain in the left lumbar region radiating to the bladder which put her in bed for three or four days. She did not have a doctor. There was no urinary disturbance with this pain. She had no further trouble until seven years ago when she was taken with a severe, constant, dull aching pain in the left lumbar region radiating to the bladder associated with nausea and vomiting and frequency. There was no blood in the urine. She was in bed several days. After this spell she felt weak and exhausted. This pain required morphia for relief. Two weeks later the patient passed a stone as large as a pea. She passed another stone six months later and two stones four years ago following similar attacks of pain. For the past seven years she has had poor health because of these attacks and for a long time kept morphia in the house for relief of pain. Her last attack was six weeks ago. There was a dull aching pain at first in the left lumbar region and in the left lower abdomen but the most prominent symptoms at this time were frequency and pain on urination. The patient had a chill at the beginning of this spell and two others during the next two weeks with slight fever. The urine was dark colored. Frequency amounted to every five minutes with pain during urination. Often during urination the flow would suddenly stop causing her considerable pain. She often passed sand in the urine. There was no cardiac symptoms and patient seemed in good condition.

Physical examination revealed nothing noteworthy.

Urinalysis showed pus 3+. Blood 2+.

X-ray report: Large stone filling right kidney pelvis. Small stone in the left kidney pelvis. There was also a long slender stone in the bladder.

This patient was operated upon April 5, 1917. The stone was removed from the left

kidney pelvis following which the kidney pelvis was closed with catgut (nephrolithotomy). The stone was removed from the bladder at this time by a vesico-vaginal incision. The incision was closed and a self-retaining catheter in the bladder.

Her post-operative convalescence was uneventful except for a mild phlebitis in the left leg about two weeks after the operation.

The patient was allowed to return home three weeks after the operation. She returned four months later to have the stone removed from the right kidney. She stated that she had been in good health except for three or four spells of pain in the right renal region. She had had no further pain in the left side. The pain in the bladder and frequency had disappeared. If she took a great deal of exercise, her feet and ankles would swell a little. This is worse on the left side. She had a bad spell of right sided pain four days before coming for the second operation.

The second operation was performed September 10, 1917. The right kidney was found to contain in its center a large branched coral stone. There was also a stone in the upper pole the size of a large peanut hull and several small stones in the calices. The right kidney was removed. (Fig. II.)

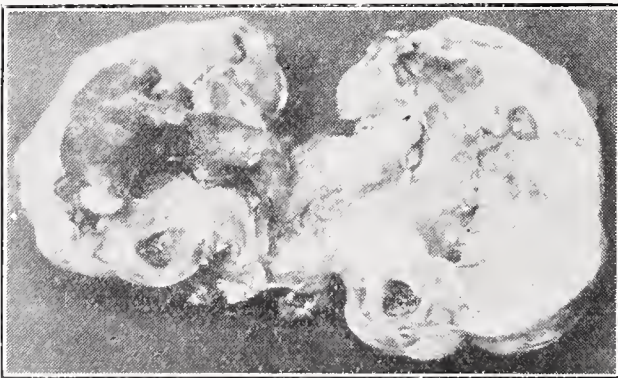


Fig. II. Multiple stones in calyces of kidney with large branched stone lying on left half of section.

The post-operative convalescence was uncomplicated and patient was allowed to return home in less than three weeks from date of operation.

Comment: The plan of removing the smaller stone in the good kidney and also in the bladder so as to free at least one side of the urinary tract and render it practically normal was followed so that the second operation which was a severe one and really re-

quired the removal of the kidney as is essential in all cases of large branched stones with chronic infection and more or less disorganized kidney. The opposite plan of doing the larger operation and leaving all the work to be done by a kidney harboring a stone with lowered functional capacity with a possibility of course of a calculous anuria following was borne in mind and avoided.

GANGRENOUS APPENDICITIS.

The patient was a school girl, age 16. Her family history was negative. The patient had had the usual diseases of childhood but no serious illness. Her menses began at 11, irregular, painful, duration 3-4 days. About three days ago patient was suddenly taken with severe pain in the epigastric region. This pain quickly radiated down to both iliac regions, and associated with this pain think that she had fever at first. The patient says that this pain was present at first in both sides of the chest and under both shoulder blades. The pain also radiated down her thigh. There was painful and frequent urination. The patient began to menstruate Thursday night but the flow has ceased now. She has not vomited much since Saturday. She has had three hypodermics since Friday night was first taken and one this Monday morning, on her way to the city.

On admission the patient had the appearance of being in shock. Her extremities were cold, and her finger nails were blue and her lips were blue. The pulse was very weak and rapid, and at times could hardly be felt. The blood pressure was about 10 and 40. The abdomen was markedly swollen. Moist rales in the base of the right lung. Temperature 102°. Leucocyte count was 16,000. No urine could be obtained for examination. Patient was a moribund, and died five hours after admission to the hospital, without operation.

At post-mortem upon opening the abdominal cavity much purulent yellow fluid pours out. The stomach and intestines are huge, being filled with gas. The omentum was wrapped about the adherent intestines and was red and yellow. All of the intestines are matted together by this purulent fluid. The appendix is 11.9 cm. long, bright red and yellow and 2 cm. in its greatest diameter. A

small perforation is near its base. This marks the presence of an enterolith. (Fig. III.)



Fig. III. Post Mortem Specimen of Giant Appendix with portion of Cecum. Perforation indicated by pointer.

This distressing case shows that we are not getting as high degree of perfection in our appendix cases as we should and could get, and not any better than obtained ten or fifteen years ago. Murphy was not wrong when he said that the average mortality of acute appendicitis in all of the hospitals throughout this country was about 10 per cent. This, of course, is the majority of delay and advanced pathology. He further said that any case that came to the operating table with a perforation had up to that time been maltreated. This unnecessarily fatal case had not been seen by a physician until the day before death. Unfortunately this girl was attended by a matron at a school, who could not, of course, undertake treatment of such a severe type of disease, in fact of any intra-abdominal illness whatever. The most prevalent and deadly mistake in acute abdominal conditions is purgation. It precipitates perforation, and is the most costly lesson still unlearned in appendicitis.

INTUSSUSCEPTION.

Case No. — Mr. C. B. Male, age 20 and married. The family history was negative. He had never had any serious illness or operations. He had been perfectly well up until the present trouble.

Two days ago, in the afternoon, the patient was suddenly taken with pain in the right iliac region. The pain was cramping in nature, that is, it would come on, last a minute or so, then subside only to return again. The pain

was severe and without radiation. He became nauseated and vomited. He vomited gastric contents with no blood. The patient went to bed but did not seem to get better. There were no chills and no fever, he thinks. The pain, nausea and vomiting continued and gradually got worse. The following day his bowels moved and there was no blood. He said that he could feel a mass in the right side of his abdomen. The mass was tender. He then came to us for advice.

The physical examination revealed a mass in the upper right side of the abdomen. The mass was tender. There was no rigidity and very little distention. The tumor was circular in outline and oblong. There was no evidence of obstruction. As a matter of fact, his bowels had moved normally a short time before examination. The pulse and temperature were both normal. There were no other findings of importance.

The Urinalysis was negative and the leucocytes were 16,000.

The patient was operated on March 4, 1919. The tumor was found to be an intussusception of the ileum. The intussusception was impossible to reduce. Twelve inches of black, reddish, almost gangrenous, bowel was resected and an end to end anastomosis made. (Fig. IV.)

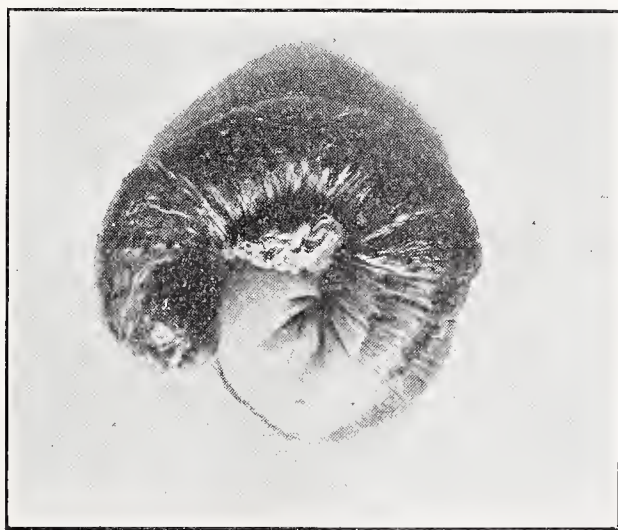


Fig. IV. Intussusception Portion of Intestine Resected.

The patient had an uncomplicated recovery and returned home about three weeks after the operation. The patient is at present in good health.

REMARKS MADE BY DR. FRANK D. SMYTHE, PRESIDENT OF THE
MEMPHIS AND SHELBY COUNTY MEDICAL SOCIETY AT A BAN-
QUET AT THE GAYOSO HOTEL JUNE 9, 1922, GIVEN BY
SOME PHYSICIANS IN HONOR OF DR. WILLIS C. CAMP-
BELL AND DR. MARCUS HAASE, WHO WERE RE-
CENTLY ELECTED CHAIRMEN OF THE SECTIONS
OF WHICH THEY ARE MEMBERS BY THE
AMERICAN MEDICAL ASSOCIATION.

WE HAVE assembled this evening for the purpose of expressing our appreciation of the honor conferred upon two of our distinguished fellow doctors at the last meeting of the American Medical Association by the Sections to which they belong.

The honor conferred upon Dr. Willis Campbell by the Orthopedic Section was the election of the doctor as Chairman of the Section on Orthopedic Surgery.

Dr. Marcus Hasse was likewise honored by the Section on Dermatology and Syphilology by his election as Chairman of that Section.

We rejoice that they have received the reward which their merit and long service in the cause so richly entitles them to receive. The history of the Medical Profession of Memphis is without record of a similar meeting, notwithstanding the fact that several of our members, some of whom are with us tonight, have been similarly honored for meritorious service in their respective specialties by Sections of the American Medical Association. Among those present who have enjoyed the distinction of having been chosen as Section Officers of the American Medical Association are:

Dr. E. C. Ellett.

Dr. Frank A. Jones.

Dr. William Britt Burns.

Dr. J. B. McElroy.

Dr. John L. Jelks.

Dr. Richmond McKinney.

Dr. Ellett was elected and served with distinction, both as a Secretary and Chairman of the Section on Ophthalmology, the specialty in which his superior attainments have won for him renown and an exalted position among the masters in that field of endeavor.

Dr. Frank A. Jones was elected Chairman

of the Section on General Medicine of the American Medical Association and presided at the meeting at Saratoga Springs in 1902. Dr. Jones discharged the important duties of his responsible position with credit to himself and to the Medical Profession. He was the youngest man ever elected to the Chairmanship of the Section of General Medicine of the American Medical Association.

Dr. Frank A. Jones was unanimously elected President of the Southern Medical Association, in 1922, the second largest and most important Medical Association in the world. Our local society met one week thereafter, and to the discredit of its members Dr. Jones' election to the Presidency of the Southern Medical Association was not mentioned. The Association grew, however, under his direction and administration as it had never grown before; and there are but few, if any, physicians today who enjoy a larger following or who are more widely and more favorably known, or who have a more loyal and devoted circle of friends than Dr. Frank A. Jones.

Dr. William Britt Burns was while yet a very young man, professionally speaking, elected as Secretary on General Medicine of the American Medical Association, and the history of the Association does not exhibit a more interesting program than the one presented by Dr. Burns. The Doctor's activities in behalf of organized medicine and his contributions to medical and surgical literature have created for him an honorable and enviable position among the men worth while in our profession.

Dr. J. B. McElroy was selected to deliver the Oration in Medicine at the Atlantic City meeting of the American Medical Association in the year 1908. His address was a classic. None more scholarly or logical had been de-

livered before that large body of great men. He received compliments upon that address from all over this broad land. But few, if any, however, from his home town. He leaped into a prominent place among America's great physicians, and his course since that occasion has been a march upward and onward, and we find him today at the head of one of the greatest medical colleges in the South. Under his guidance we hope and expect to see it prosper and develop into a rock-ribbed giant among America's great institutions.

Dr. John L. Jelks, while never having been Chairman of his Section of the American Medical Association had conferred upon him the great honor of being chosen President of the American Proctologic Association, an honor which the Doctor richly deserved at the hands of his coworkers. Dr. Jelks' work in his chosen field of procto-gastroenterology has been accomplished in spite of many obstacles, physical and otherwise.

Dr. Jelks contributed a chapter on Dysentery in Hirschman's Diseases of the Rectum, and gave credit in that chapter to work done by medical men in the South whose names but for Dr. Jelk's fair-mindedness might never have been seen in medical literature. The Jelk's Recurrent Colon Tube is a product of his inventive genius and is used in all portions of the civilized world. His industry and honesty of purpose have made for him many loyal friends in the Profession and an enviable reputation among the great men devoted to his special line of work.

Dr. Richmond McKinney, a distinguished Oto-Rhino-Laryngologist of Memphis, was complimented by being made Chairman of the Section of the American Medical Association on Otology, Rhinology and Laryngology, and presided over that Section with dignity and marked success. Dr. McKinney was elected President of the Tennessee State Medical Association in 1918, and the Society prospered under his administration. He was elected Chairman of the Section on Otology of the American Medical Association and presided over the meeting of the Section at Boston last year.

Dr. McKinney is very much beloved by his large clientele and is one of our most distinguished laryngologists.

It is with a feeling of deep humiliation for me to be compelled to say that never a word was spoken nor a line written complimentary or congratulatory of the honors received, nor of the work done by either of the distinguished Fellows whose records I have but briefly mentioned. Just a congratulation now and then from a warm personal friend; never a public expression of approval or of appreciation of the honors that had been bestowed upon our fellow doctors. "A prophet is not without honor, but his own country, and among his own kin, and in his own house." (Mark 6:4.) Until the present moment the conduct of our local profession toward each other has demonstrated that the saying of the meek and lowly Saviour on the occasion of his coming applies with equal force today if measured by the treatment we accorded each other in the past.

I am one of the many who rejoice that the bitter factionalism and strife which existed during the past is dead. If not dead it is stricken with a fatal malady, and let us hope and pray that there will be no resurrection of the unhappy and unprofitable conditions heretofore existing.

I hope that you will pardon me for alluding to a little personal experience, the result of the war that was being waged twenty-five years ago, when I came to the city for the purpose of practicing medicine and surgery and to make it my home, by the medical factions which existed at that time. My hopes and aspiration for a useful and possibly a successful career had reached the boiling point, and I was full to the brim with enthusiasm, hungering and thirsting for an opportunity to do. I became associated in the practice of medicine and surgery with a distinguished surgeon, a man whom I learned afterward was considered a power in one of the numerous factions then existing. It was but a very short while until I discovered that I had visited upon my head, not only the disregard but the active enmity of a number of physicians I had never seen or had never heard of because, forsooth, I was professionally associated with a gentleman belonging to a different faction. Tonight I see unmistakable evidence of that discreditable, unholy and regrettable situation rapidly passing away, and from

the bottom of my heart I hope never to return.

It has frequently occurred for two or more of the Sections of the American Medical Association to elect Chairmen who happen to come from the same city. At Boston last year three of the Section Chairmen were selected from San Francisco. The same thing has occurred with physicians in Chicago, Philadelphia, Rochester, and New York. That, however, does not make us any the less enthusiastic or appreciative of the distinction which two of our fellows now enjoy, and who have been shown such distinguished consideration, and it is fit that we are here to celebrate the occasion. I wish here and now to commend the man among us who is big enough to have initiated the movement which has eventuated in this great and glorious celebration, being conducted in honor of Dr. Campbell and Dr. Haase. Not so much because it is Dr. Campbell and Dr. Haase who have been honored, but because Dr. Campbell and Dr. Haase are our neighbors, and they are worthy fellows of our high calling, and by honoring these gentlemen we likewise honor ourselves.

This meeting is epochal in nature, a new era has been born in the medical profession of our city, and better things are in store for us in the future than we were privileged to enjoy in the past.

When I was requested by our worthy Toastmaster to respond to a toast at this celebration I thought that he did so because I, as did the honor guests, hailed from America's greatest commonwealth, Mississippi. I am proud of the privilege of participating in this meeting of physicians who are glad to do honor to a worthy fellow. Personally and professionally the honor guests are held in high esteem by myself.

Dr. Campbell's grandfather, one of the most eminent jurists that this country ever had, namely Judge J. A. P. Campbell, Chief Justice of the Supreme Court of Mississippi for 25 years, lived in my native town, Kosciusko, during his youth and early manhood; and it was the vote of my lamented father, a bosom

friend of the Judge, that resulted in his election to the Legislature; and he enjoyed the distinction of being the only man in the State of Mississippi who was ever elected to the Legislature and who was also elected Speaker of the House of Representatives before he had attained his majority. Dr. Campbell's father and my mother, when children played together upon the side of the hill upon which the wigwam of Chief Red Bird of the Choctaws was once situated.

Dr. Haase, like Dr. Campbell, is a native Mississippian. It was not my privilege and pleasure to know the Doctor and his family until I became a citizen of Memphis. I have known Dr. Haase since my removal to Memphis, however, and know him to be an earnest and faithful worker in the cause. Work indeed has ever been his talisman; and the great heights to which he has attained in his chosen field of endeavor makes him a shining example of what may be accomplished by any young man in his chosen field of labor by industry and honesty of purpose.

"Plow deep while sluggards sleep.

And you will have corn to sell and corn to keep."

If we will but purge ourselves of envy, jealousy, and the worst of all habits, that is, unjust criticism of each other, and present a united front in our fight against the common enemy, the result would be immeasurable in blessings for those whom we serve; and we in turn would justly occupy a more exalted station in this world's affairs than we are enjoying today.

Let us resolve now to be more kind and more generous toward each other in the future than we have been in the past, and to stand with outstretched hand to every struggling fellow who is laboring honestly in the cause of humanity, and to be ever ready to do honor unto him to whom honor is due.

Let us stand and drink to a united profession for Memphis, and an era of peace and prosperity for her and for her unsurpassed citizenship.

FIRST DISTRICT	Sullivan Carter Johnson	Greene	Washington	Cocke	Totals
Number of members of the Society now	25	17	30	5	82
Number of physicians residing in the District	60	32	35	14	131
Number of physicians eligible for membership who are not members of the Society	34	15	4	8	61
Number of new members since last April	3	2	5	0	10
Number of members who have died since last April.....	0	0	1	0	1
Number of members dropped from membership roll.....	7	5	0	8	20
Number of meetings of Society last year	11	4	10	2	27
Average attendance at meetings	9	8	12	4	32
Number of scientific papers read	10	5	15	2	32
Medical Defense for all members?	No	Yes	* No	No	

*All except one paid.

County Presidents: Sullivan-Carter-Johnson, J. O. Woods, Elizabethtown—Greene, E. C. Donnold, Greeneville—Washington, H. M. Cass—Cocke, J. E. Northcutt.

County Secretaries: Sullivan-Carter-Johnson, W. K. Vance, Jr., Bristol—Greene, M. A. Blanton, Baileyton—Washington, E. T. West, Johnson City—Cocke, J. E. Hampton, Newport.

C. P. FOX, *Councilor*.

SECOND DISTRICT	Anderson	Blount	Campbell	Jefferson	Hamblen	Knox	Roane	Soft
Number of members of the Society now	14	22	22	....	16	121	17	9
Number of physicians residing in the District	16	24	27	....	17	160	29	9
Number of physicians eligible for membership who.....	2	2	7	....	4	15	11	0
are not members of the Society								
Number of new members since last April	3	2	10	....	2	14	0	0
Number of members who have died since last April.....	0	1	0	....	1	1	0	0
Number of members dropped from membership roll.....	1	0	0	....	1	18	2	0
Number of meetings of Society last year	3	51	7	....	12	53	11	2
Average attendance at meetings	8	11	12	....	8	37	9	6
Number of scientific papers read	3	20	8	....	12	53	23	0
Medical Defense for all members?	No	Yes	No		Yes	Yes	No	Yes

County Presidents: Anderson, W. S. Carden, Andersonville—Blount, G. D. Leguire, Maryville—Campbell, L. M. Scott, Newcomb—Jefferson, B. M. Tittsworth, Jefferson City—Hamblen, no report—Knox, Roane, no report—Scott, no report.

County Secretaries: Anderson, J. S. Hall, Clinton—Blount, F. A. Zoller, Maryville—Campbell, L. M. Sott, Newcomb—Jefferson, B. M. Tittsworth, Jefferson City—Hamblen, C. T. Carroll, Morristown—Knox, Jessie C. Hill, Bearden—Roane, W. W. Hill, Harriman—Scott, D. M. Woodward, Winona.

S. R. MILLER, *Councilor*.

THIRD DISTRICT.
(No report received from this District.)

FOURTH DISTRICT	Sumner	Trossdale	Wilson	Putnam	Jackson	Clay	Overton	Smith	Macon	Pickett	Fentress	Morgan	Cumberland
Number of members of the Society now	20	....	17	13	6	....	....	11	8	....	....	....	....
Number of physicians residing in the District	36	....	30	21	9	....	....	25	11	....	....	....	....
Number of physicians eligible for membership who are not members of the Society	10	....	8	7	3	....	....	14	10	....	....	....	....
Number of new members since last April	0	....	4	....	....	....	....	0	1	....	....	....	....
Number of members who have died since last April.....	0	....	2	1	0	....	....	0	0	....	....	....	....
Number of members dropped from membership roll....	0	....	3	3	2	....	....	4	0	....	....	....	....

Number of meetings of Society last year	6	12	12	10	12	3				
Average attendance at meetings	11	12	5	5	10	6				
Number of scientific papers read	6	12	6	12	9	1				
Medical Defense for all members?	No	No	No	No	No	No				

County Presidents: Sumner, H. Bate, Castolian Springs—Wilson, J. S. Campbell, Lebanon—Putnam, L. M. Freeman, Greenville—Jackson, R. C. Gaw, Ganesboro—Smith, Thayer S. Wilson, Gordonsville—Macon, M. H. Allen, Lafayette.

County Secretaries: Putnam, Lex Dyer, Cookeville—Macon, A. Y. Kirby, LaFayette—Jackson, C. E. Reeves, Gainsboro—Wilson, Walter S. Dotson, Lebanon—Smith, B. J. High, Elmwood—Sumner, John R. Parker, Gallatin

Z. L. SHIPLEY, *Councilor.*

FIFTH DISTRICT.

	Marshall	Rutherford	Lincoln
Number of members of the Society now	17	26	18
Number of physicians residing in the District	19	33	29
Number of physicians eligible for membership who are not members of the Society	0	7	12
Number of new members since last April	0	4	0
Number of members who have died since last April.....	0	0	0
Number of members dropped from membership roll.....	1	0	0
Number of meetings of Society last year	8	12	5
Average attendance at meetings	9	14	8
Number of scientific papers read	0	11	5
Medical Defense for all members?	No	No	No

County Presidents: Marshall, C. P. Marsh, Petersburg—Rutherford, A. N. Gordon, Fosterville—Lincoln, J. D. Bryant, Fayetteville.

County Secretaries: Marshall, Thomas E. Reed, Lewisburg—Rutherford, J. A. Scott, Murfreesboro—Lincoln, M. L. Goodrich, Fayetteville.

J. P. TAYLOR, *Councilor.*

SIXTH DISTRICT.

	Robertson
Number of members of the Society now	10
Number of physicians residing in the District	21
Number of physicians eligible for membership who are not members of the Society	11
Number of new members since last April	0
Number of members who have died since last April.....	0
Number of members dropped from membership roll.....	3
Number of meetings of Society last year	12
Average attendance at meetings	About 50%
Number of scientific papers read	10
Medical Defense for all members?	No

County Presidents: Robertson, W. W. Winters—Davidson, A. W. Harris, Nashville.

County Secretaries: Robertson, B. B. Sory, Cedar Hill—Davidson, J. O. Manier, Nashville.

Davidson, Robertson, Montgomery and Cheatham counties are all in the 6th Councilor District.

Cheatham county is not organized and there is no prospect of organization.

The Davidson County Medical Society and Nashville Academy of Medicine enrolled 192 members in 1921 and now has 204 paid up members. This society has weekly meetings with programs prepared for the year. This year a paper has been presented each week and usually one or more carefully pre-

pared cases are reported at each meeting. The Davidson County Society is in better condition than for many years. All members pay medical defense.

Montgomery county had 14 members in 1921 and now has 14 paid up for the current year. The secretary failed to reply to a request for a report to the Councilors.

Robertson County reported and the report is attached hereto.

W. C. DIXON, *Councilor.*

SEVENTH DISTRICT.

	Hickman	Williamson	Giles	Lawrence	Dickson	Maury	*Lewis	*Houston	*Wayne	*Humphrey	Totals
Number of members of the Society now	...	9	21	0	6	29	...	...	...	...	56
Number of physicians residing in the District	...	31	28	18	16	39	...	...	...	...	132
Number of physicians eligible for membership who are not members of the Society	...	20	4	18	7	9	...	...	...	...	58
Number of new members since last April	...	1	1	0	0	2	...	...	...	...	4
Number of members who have died since last April....	...	1	2	0	0	1	...	...	...	...	4
Number of members dropped from membership roll....	...	0	0	0	0	0	...	...	...	...	0
Number of meetings of Society last year	...	6	12	0	1	12	...	...	...	...	25
Average attendance at meetings	...	7	12	50	3	121	...	...	...	...	346
Number of scientific papers read	...	6	15	0	0	10	...	...	...	...	31
Medical Defense for all members?	...	No	No	No	No	No	...	...	...	...	...

County Presidents: Williamson, (Not reported.)—Giles, J. H. Morris, Pulaski—Lawrence, (Not reported.)—Dickson, Hartwell Weaver, Dickson—Maury, Robt. Pillow, Jr., Columbia.
*Not Organized.

EIGHTH DISTRICT.

	Henry	Henderson	Hardin	Decatur	Madison	Carroll	McNairy	Chester
Number of members of the Society now	...	8	14	32	7	10	24	16
Number of physicians residing in the District	...	13	32	8	10	19	23	...
Number of physicians eligible for membership who are not members of the Society	...	5	12	9	3	6	...	...
Number of new members since last April	...	...	...	3	...	...	...	...
Number of members who have died since last April....	...	...	...	1	...	...	1	...
Number of members dropped from membership roll....	...	...	2	1	...	...	...	...
Number of meetings of Society last year	...	8	5	14	10	...	12	...
Average attendance at meetings	...	75%	8	14	5	...	11	...
Number of scientific papers read	...	18	10	13	10	...	12	...
Medical Defense for all members?	...	No	No	Yes	No	No	No	No

M. S. HERRON, Counilor.

NINTH DDISTRICT.

	Dyer	Haywood	Obion	Lauderdale
Number of members of the Society now	25	8	18	24
Number of physicians residing in the District	32	22	24	29
Number of physicians eligible for membership who are not members of the Society	7	19	4	5
Number of new members since last April	1	1	0	0
Number of members who have died since last April....	0	0	1	1
Number of members dropped from membership roll....	2	0	3	0
Number of meetings of Society last year	6	3	6	10
Average attendance at meetings	12	6	18	8
Number of scientific papers read	6	0	7	10
Medical Defense for all members?	No	Yes	No	No

County Presdents: Dyer, W. P. Watson, Dyersburg, Haywood—Erl R. Mulhern, Brownsville—Obon, J. D. Carlton, Union City—Lauderdale, W. D. Sanford, Ripley.
County Secretaries: Dyer, E. L. Motley, Dyersburg, Haywood—Erl R. Mulhern, Brownsville—Obion, Ira Park, Union City—Lauderdale, W. V. Sanford, Ripley.

E. H. BAIRD, Counilor.

TENTH DISTRICT—Shelby County.

Memphis and Shelby County Medical Society.

Membership (1921)	269
Meetings	21
Papers	42
Medical Defense	223
Average Attendance	90
Expulsions	1

Fayette County.

Not reported in 1921 and 1922.

Tipton County.

Membership (1921)	16
No definite information, but considered to be pretty well organized.	

Note: The attention of the House of Delegates is called to the fact that Fayette & Tipton Counties are no longer in the Tenth Congressional District and it is recommended that they be properly placed.

Note: The Memphis and Shelby County Society has recently been reorganized with a new Constitution and By-Laws correlated with the Tennessee State Association. A special feature is the organization of a House of Delegates, consisting of the President, Seretary and Treasurer, the last 5 Ex-presidents, and a delegate for every 5 members. This house of delegates meets once a month for one hour preceding the first meeting of the month and attends to all routine business of the society, thus allowing more time for seientific work.

Memphis and Shelby County Medical Society for 1922 has officers the equal of 1921. Its membership is slightly more than 16% or 1/6th of the entire state Association membership.

J. L. MeGEHEE, Conneilor.

REPORT OF COUNCILOR OF
SECOND DISTRICT.

Dr. Olin West, Sec'y.,
Nashville, Tennessee.

Dear Dr. West:

I am herewith enclosing you my report for the Second Councilor District.

I have tried again and again to secure a report from Jefferson County, but did not succeed, and thought that I would have opportunity to drive up there and make investigation, but illness in my own home for the last eight days has prevented it.

Except Jefferson County and Unicoi County, which has never been organized, I think the soëieties in this District are in good condition, and doing splendid work.

When good roads are secured, if ever, in Unicoi County, I hope to interest three or four of the physicians in a society of their own, or in one in an adjacent county.

I am also enclosing you Dr. Shipley's report, for the Fourth District. Please watch the mail, as one of the other councilors may mail their report to

Memphis to me as chairman of the council, as the one who sent them blanks, and who wrote them urging them to work up their report, and have it ready for the meeting.

I regret that I cannot be with you at this meeting, as this is the first meeting that I have missed dnring my membership for over a quarter of a century.

Please see that councilors are elected for the districts of even number, and that the new council will organize and elect a chairman, so that someone will have the authority and feel responsible for getting up blanks, stationary, and stimulating as much interest as possible in the councilors work.

Until the last year or two, the council has not reorganized or elected a chairman until the meeting the following year, hence no one had the important work.

With best wistes for a suceessful meeting, I am,

Yours trnly,

S. R. Miller,

Chairman.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

JULY, 1922

STANDING COMMITTEES.

At the last meeting of the Association, the House of Delegates passed a resolution to the effect that the Committee on Memorials is to be composed of the Secretaries of the component County Societies with the Secretary of the State Association as Chairman, and that it shall be the function of the County Secretaries to report the deaths on any of their members together with all pertinent information concerning them to the Secretary-Editor of the State Association, to the end that due notice may be printed in the current issue of the Journal.

Elsewhere in the Journal this month appears the list of the names of members composing the standing Committees of the Association appointed by the President, Dr. Holland M. Tigert.

It is believed that this earlier-than-usual announcement of these bodies will enable them to carry out their functions and to bring in more complete reports to the House of Delegates than has been customary at previous annual meetings.

A CORRECTION.

In our May issue we reproduced "Ten Ways to Kill a Medical Society" from the "Bulletin" of the A. M. A. which credited the article to the Pittsburg Medical Journal, to which we conformed.

Since that time, Dr. Charles J. Whalen, Editor of the Illinois Medical Journal, in a personal communication states that he was the original author of the article mentioned and that it first appeared in his own publication.

It gives the Journal of the Tennessee State Medical Association pleasure to render its thanks and the credit to whom it belongs.

MUNICIPAL HOSPITALS.

James Bryce, the celebrated Englishman who is now dead, wrote a book on the "American Commonwealth." It is considered by many to be the best analysis of American Municipal Government published, be the author American or foreigner. In it he said: "The American city is worst governed by the worst." In so far as generalizations are true, to this statement we have to shamefully give our assent.

Most of the larger cities of the state have city hospitals and many others have or contemplate having hospitals in a quasi-official capacity. As a natural consequence the government of these hospitals arises either directly or indirectly from the city or town officials elected by the people. That an aspirant for office, or an incumbent in office, should traffic in political trade the management of a city hospital is as lamentable as it is true. There can be no comparison between the hospital board and the other boards and commissions which ordinarily make up the usual city government. The city hospital is designed for the poor and indigent of the city and any perversion of fund or effort by the hospital board is no less than trafficking in human life, and that of the poor and ignorant who need protection most. But it seems that for pelf or place a few politicians are willing to sacrifice their fellow being. The millennium will not have to arrive before the people will rise up against this man.

LO. THE APPENDIX.

What is a normal appendix, and why? Has the pathologist no standard of normalcy? In discussing the question before a medical society a surgeon, one with more candor and frankness than usual, remarked that one could get a report back from the pathologist of "chronic appendicitis," if the pathologist was at all favorably inclined to the surgeon. Until some one tells us exactly what a normal appendix is, we propose the following definition: one that is safely in position in the abdominal cavity and has produced no symptoms. The abnormal appendix is the same one which has been removed through error in diagnosis and sent to the pathologist. Will some kindly disposed pathologist clear us up on this matter?

WHO READS THE JOURNAL?

Having had a more or less intimate connection with the State Journal for a number of years it has been a source of a great deal of speculation to the writer what proportion of the profession reads the Journal. It is more than probable that you read your article if you happen to have it in the Journal but do you read the other fellows? Do these little editorial jottings interest you? Are the News Notes worth while?

Your humble editors (we apologise for the term) are like the wife who had been railing at friend husband for an hour and said husband had not opened his mouth. She had completely run out of something to say but finally added vehemently, "For God's sake, say SOMETHING."

DEATHS.

DR. JOSEPH. A. CROOK.

DR. JOSEPH ALEXANDER CROOK, of Jackson, Tenn., and former president of the Tennessee State Medical Association, died at the home of his son, Dr. Jere L. Crook, in Jackson, Tenn., the morning of June 12.

Dr. Crook had failed in health rapidly following the death of his wife last October, although he had been able to go to his hospital daily until a few weeks ago.

He was born in Henderson County, Tennessee, in 1847. He first began the practice of his profession in Henderson, Tenn., but moved to Jackson in the late eighties and has been associated there in the practice of medicine and surgery with his son, Dr. Jere L. Crook, with whom he built and operated the Crook Sanitarium.

Dr. Crook was the father of Mrs. Harry B. Anderson of Memphis, and of the late Mrs. Edgar T. McHenry. His other children, all of whom were with him when he died, are Dr. Jere L. Crook of Jackson, Mrs. Walter Hale of Murfreesboro, Tenn., and Mrs. B. H. Blacklock of Charlotte, N. C.

Of a type that is passing with his generation, Dr Crook was one of the old-fashioned

family physicians, medical adviser as well as confidant of the family he attended. He was a citizen of the highest type and his loss will be felt by the entire community, as he was public-spirited to a high degree, charitable and hospitable. Always ready to lend his assistance for the betterment of his community and never too tired to heed the call of the sick and distressed and possessed of a high sense of honor, his passing will mean much to all with whom he came in contact.

Dr. Crook was a devoted member of the First Baptist Church of Jackson, in which he was a deacon for over thirty years. For thirty-four years he was a trustee of Union University and as secretary of that board gave untiring aid and thought to the upbuilding of the institution. He was a director since its organization of the Security National Bank of Jackson and for 35 years was district and division surgeon of the Illinois Central Railroad and also surgeon for the Nashville, Chattanooga & St. Louis Railroad.

He was a graduate of Madison College, of Spring Creek, Tenn., and received his degree in medicine from Jefferson Medical College. He was one of the organizers and former president of the West Tennessee Medical Association and in 1900 was elected president of the State Medical Association. The author of a number of medical papers, he was most successful in the treatment of typhoid fever and his name will always be linked with the treatment of that disease which he so often discussed at the medical association meetings and in medical journals.

DR. GEO. WASHINGTON PIPER.

We regret to chronicle the death of Dr. George Washington Piper, of Franklin County.

He was born March 5th, 1871, at New Bridge, Franklin County, Pennsylvania. He graduated in medicine at the University of the South, Sewanee, Tennessee, 1909, and died May 9, 1922, aged 51 years, 2 months and 24 days. His widow and six children survive.

He was a member of the State, County and American Medical Associations. He practiced at Alto, Tennessee, 5 miles above Decherd from his graduation until his death. He leaves a host of friends and a community sadly in need of his services.

He suffered a stroke of paralysis on May 18, and died May 29. Two years previously he had suffered a stroke but seemingly had almost gotten over it and had been conducting a large practice for the last 18 months.

STANDING COMMITTEES OF THE TENNESSEE MEDICAL ASSOCIATION FOR 1922.

Committee on Public Policy and Legislation.

Dr. H. H. Shoulders, Chairman.
Dr. W. M. McCabe,
Dr. Robert Caldwell,
Dr. W. F. Clary,
Dr. Lee Smith.

Committee on Scientific Work.

Dr. Larkin Smith, Chairman.
Dr. J. F. Gallagher,
Dr. W. C. Dixon,
Dr. J. O. Manier,
Dr. T. G. Pollard.

Committee on Memoirs.

Dr. Larkin Smith, Chairman.

Secretaries of each County Society.

Committee on Medical Defense.

Dr. S. R. Miller, Chairman.
Dr. Jerry Crook,
Dr. H. H. Shoulders.

Committee on Conservation of Vision.

Dr. E. C. Ellett, Chairman.
Dr. Battle Malone,
Dr. S. W. Woodyard,
Dr. T. R. Ray;
Dr. H. K. Alexander,
Dr. E. B. Allen,
Dr. John S. Freeman,
Dr. Lee K. Gibson,
Dr. M. A. Beasley.

Committee on Cancer.

Dr. W. D. Haggard, Chairman.
Dr. W. C. Dixon,
Dr. L. L. Sheddan,
Dr. E. D. Newell,
Dr. Wm. Britt Burns.

Committee on Education.

Dr. Jas. B. McElroy, Chairman.
Dr. W. J. Breeding,
Dr. L. E. Bureh,
Dr. Geo. R. West,
Dr. W. H. Witt,
Dr. W. L. Williamson,
Dr. Herman Hawkins.

Committee on Social Insurance.

Dr. H. B. Everett, Chairman.
Dr. B. S. Ray,
Dr. Robert Caldwell,
Dr. J. T. Moore,
Dr. C. J. Carmichael,

This Committee continued by House of Delegates.

Committee on Hospitals.

Dr. Frank D. Smythe, Chairman.
Dr. W. R. Wallace,
Dr. G. C. Williamson,
Dr. E. O. Newell,
Dr. C. N. Cowden,
Dr. L. L. Sheddan,
Dr. W. C. Dixon,
Dr. W. U. McDonald,
Dr. O. S. McCown,
Dr. J. S. McCulloek,
Dr. S. H. Hodge,
Dr. W. T. Blaek.

Committee on Health Problems and Education.
(To be appointed later.)

COUNTY SOCIETIES.

The Grundy County Medical Association held its monthly meeting in the Court House, Traey City, Tenn., July 11, 1922.

A paper on "Control of Contagious Diseases" was read by W. A. Jackson, Monteagle.

Dr. Eugene C. Lindsey, who has lately moved to Traey City was admitted to membership. The members of the Association, with their wives will be the guests of Dr. and Mrs. Jackson at their next meeting, which will be held at Monteagle, Aug. 8, at 10:00 A. M.

W. A. Jackson,

Secretary Grundy County Medical Ass'n.

The Grundy County Medical Association was organized on June 6th, 1922.

The following officers being elected for the ensuing year: Dr. N. B. Bowden, Pelham, President.

Dr. W. P. Stone, Traey City, Vice President.

Dr. W. A. Jackson, Monteagle, Secretary-Treasurer.

Among others present were Drs. W. L. McCaleb, Coalmont, D. H. Bryan, Traey City, and E. C. Lindsay, Traey City.

The meetings will be held monthly on the Tuesday after the first Monday.

NEWS NOTES.

Dr. Olin West was in Nashville during the middle of July. As Field Secretary of the American Medical Association he had been on tour of the New England States. While enthused and pleased with his new work he stated that the best people on earth live in Tennessee and especially in the "Dimple of the Universe," by which latter appellation he meant his old home town.

It is a pleasure to note that Dr. G. H. Taylor, of Decherd, is convalescing to the point where he can now sit up in his chair, following a stroke of paralysis from which he suffered several weeks ago.

Dr. W. L. McCaleb has been elected Health Officer for Grundy County for the remainder of the year 1922

SOUTHERN MEDICAL ASSOCIATION.

The Southern Medical Association will hold its Sixteenth Annual meeting at Chattanooga, Tennessee, November 13 - 16 1922, according to its Bulletin recently issued.

"The organized medical profession of Tennessee has had a large part in the success of the Southern Medical Association. And the Association has honored Tennessee more than any other state. Four presidents have come from Tennessee—no other state has been so signally honored. With the Chattanooga meeting the Association will have met three times in Tennessee since the birth—more than any other state. Of the section officers this year Tennessee can boast of more than any other state. The Association was born in Tennessee—it first saw the light of day in the host city this year, Chattanooga, in 1906. After sixteen years the Association will meet this year in the city in which it was born."

RAY LYMAN WILBUR—PRESIDENT
ELECT, A. M. A.

The selection of Dr. Ray Lyman Wilbur as president-elect of the American Medical Association brings to that high office a man whose record is conspicuous for many achievements, and who has commanded recognition in many

activities for marked ability in organization and leadership. Dr. Wilbur was born in Boonesville, Iowa, April 13, 1875, and removed to California when a boy. He was graduated by the Riverside High School, and received his A. B. degree from Stanford University in 1896, and the M. A. degree the year following. In 1899 he received his medical degree from Cooper Medical College of San Francisco, which later became the medical department of Stanford University. Following his graduation, he became instructor of physiology in his Alma Mater from 1896 to 1897; lecturer and demonstrator in physiology, 1899 to 1900, and assistant professor of physiology, 1900 to 1903. At this time he went to Europe and continued his studies at Frankfurt on the Main and in London. He returned to California to take up the practice of medicine in 1909 and in that year was appointed professor of medicine at Cooper Medical College. He retained his professorship in medicine and practiced his profession from 1909 to 1916, and was dean of the medical school of Stanford University during the last five years of his professorship, 1911 to 1916. Following the retirement of President David Starr Jordan of Stanford University in 1913, Professor John Casper Branner, head of the geology department, was made president, with the understanding that he would retire at sixty-five years of age, two years later; at that time, the latter part of 1915, the trustees of Stanford University, in recognition of his extraordinary administrative ability, selected Dr. Wilbur for the position of president. His work in this position has fully justified the choice. With the entrance of the United States into the World War, Dr. Wilbur was called by another Californian, Mr. Herbert Hoover, to assist in one of the fundamental activities necessary to a successful prosecution of the conflict, as chief of the Conservation Division of the United States Food Administration. For this work, Dr. Wilbur has earned the gratitude of the entire civilized world. In 1919 he received the honorary degree of LL.D. from the University of California, and from the University of Arizona. At the 1920 Session of the American Medical Association, Dr. Wilbur was appointed to the Council on Medical Education and Hospitals, and in this work he has shown a thorough insight and sympathy with the problems

of the practicing physician and with the problem of satisfactorily coordinating the work of the social agencies with that of the medical profession. Dr. Wilbur is a member of many scientific organizations; was president of the American Academy of Medicine, 1912 and 1913, and of the California Academy of Medicine, 1917 and 1918. By electing him to its presidency the American Medical Association has recognized a man typifying the highest ideals in medicine with a conspicuous gift for administration and leadership.—*Jour. A. M. A.*, June 3, 1922.

THE CITY VIEW SANITARIUM.

The City View Sanitarium has moved to its new plant which is still on the Murfreesboro Road, about one-half mile east of their former location, and two and one-half miles from the Public Square.

With new buildings designed and constructed especially for their purposes the facilities to offer patrons are the very best in their special line, the treatment of Mental and Nervous Diseases and the Addictions.

The hospital buildings are situated in the middle of a fifty-acre tract of land, surrounded by a grove and attractive lawns, making at once for complete privacy and all advantages and freedom of a rural location.

The management, personnel of staff of employees, and policy of the institution remain unchanged.

THE HIGHER EDUCATION OF CHIROPRACTORS.

What is your favorite light literature? Detective stories? Mystery stories? Humor? Have you ever read the publications issued by the various species and subspecies of the chiropractic cult—for there is, as you know, a lack of unanimity among the chiropractors. One particularly choice piece of contemporary journalism is issued by a chiropractor factory in Fort Wayne, Indiana. Its July, 1922, issue makes good hot weather reading. The editor disposes of a "model bill," recently drawn up by those chiropractors of Indiana who belong to a different subspecies from those represented by the publication in question. This Fort

Wayne journal views the bill with disfavor. It says, with refreshing naivete:

To begin with there is absolutely no need of a Chiropractic licensing and examining board in Indiana today. The existing lot of Chiropractors in Indiana cannot be improved upon. You are not being persecuted or prosecuted, you are left severely and strictly alone to practice your profession without let or hindrance from any source or any group of any kind. In fact, Indiana today is the best Chiropractic state in the entire country. Chiropractic conditions are as near ideal as it is humanly possible to approach that condition.

But the fact that Indiana is the home of the free, chiropractically speaking, is not the only objection this journal has to the proposed bill. It seems that the bill would require applicants for chiropractic examinations to submit satisfactory proof of the possession of a preliminary education, equal to that of a high school. Perish the thought! As the editor says:

How many Chiropractors in Indiana today could qualify under that rule? Of all the Chiropractors in Fort Wayne, I do not happen to know of one that is a high school graduate. In fact, I believe that the total number in Indiana able to comply with that ruling would be less than two per cent of all the Chiropractors in the state.

From the point of view of the owner of a chiropractic "college" the sentiments just quoted are eminently logical. It would be entirely unfair to chiropractic schools to insist on matriculants being educated human beings. What educated human being would ever attend a chiropractic school? Of course, from the point of view of public interest—but that's another story.—*Jour. A. M. A.*, July 15, 1922.

NEPHRITIN, ETC.

Nephritin, Peptenzyme, Trophouine and Panerobilin. Sometimes the results of the application of the esthetic arts to commercial interests is incongruous. A house organ uses the names of famous writers, presumably to attract attention. Thus: It is suggested that if the physicians to Montaigne, who died of nephritis, had known of "Nephritin" they would have been able to furnish him with "substantial constructive help"—a statement which may be more readily accepted by literateurs than by pathologists. Since all of us can not live the simple life recommended by Joaquin Miller, as a means of avoiding indigestion, it is inferred that we must depend

on Peptenzyme. It is related that Thomas Hood passed away in spite of soups and other nourishing food prepared for him by his wife. "Therefore," says the advertiser, "use Trophine and live." "Like Victor Hugo," proclaims the advertiser, "Use Trophine and Live." "Like Victor Hugo," proclaims the advertiser, "millions today are eating the unknown and are paying the toll in constipation." He further asserts, "From whatever cause it originates . . . Paneroblin is always indicated." Alas, Nephritin, Peptenzyme, Trophonine and Paneroblin cannot avail Montaigne, Miller, Hood or Hugo now. —(Jour. A. M. A., April, 1922, p. 971.)

YEAST PREPARATIONS AND VITAMIN-B Concentrates.

The Council on Pharmacy and Chemistry has adopted the following principles as a guide in the consideration of yeast preparations and vitamin B concentrates for New and Non-official Remedies: 1. The claim that deficiency of vitamin B and diseases resulting therefrom are common conditions in the United States is not at this time warranted. 2. The claim that yeast preparations or yeast extracts are, in principle or in general, essentially more effective or more practical or a more valuable means of administering vitamins than the commonly available vitamin-containing foods is not at this time supported by adequate acceptable evidence. 3. The claim that therapy with yeast or yeast preparations has as yet more than an experimental status is not at this time supported by adequate acceptable evidence. (Jour. A. M. A., April 15, 1922, p. 1146.)

The Therapeutic Use of Yeast and Vitamin Preparations.—Newspaper and magazine congratulations reminds us that we are confronted with menaces to health which not only ought to be averted but which can readily be remedied, when present, by the simple expedient of a potent proprietary vitamin preparation. If some of the claims of the advocates of a widespread yeast or vitamin therapy regarding the danger of vitamin starvation were warranted, one might still question whether the special "concentrated" or vitamin-rich medicaments were required to remedy the situation. An extensive inquiry has led the

Council on Pharmacy and Chemistry to the deduction that disease states attributable to lack of vitamin B are not widespread in this country at the present time. Even an enthusiast will be forced to agree with the Council that yeast or yeast vitamin therapy has yet nothing more than an experimental status. (Jour. A. M. A., April, 15, 1922, p. 1127.)

SOME GYNECOLOGIC MISDEMEANORS.

Some of the evils of present-day gynecology and abdominal surgery are considered by Sidney A. Chalfant, Pittsburgh (*Journal A. M. A.* June 3, 1922), such as local treatments of the virgin, except for an accidental gonorrheal infection and ill considered and unnecessary operations and surgery by the incompetent. To correct these evils, Chalfant suggests a more careful selection of medical students. Students should have more systematic instruction in the history of medicine, so that they will have the inspiration to be derived from a knowledge of the achievements of the past and in that way obtain an inspiration for their own work. Sufficient and efficient postgraduate schools should be established where the ambitious may be trained. The public should be educated as to the necessity of obtaining competent surgical advice. The boards of trustees of hospitals should be educated to a realization of the fact that the care of the sick is best accomplished in an institution in which some research work is being carried out. The members of the staff have a function other than the care of the sick. They should take sufficient time to review the work of the department with the younger men at regular intervals and to suggest, encourage and supervise some of the investigation.

A MEDICAL GARDEN.

While synthetic medicaments have held the focus of medical attention during the last two decades, those which may be obtained from medical plants have continued to be of great utility, and many even irreplaceable. Such plant derivatives as cinchona, aconite, opium, rhubarb and senna still command a wide range of use in medical practice. For this reason the exhibit of St. Louis by the Missouri Botanical Gardens of a reproduction of the old Chelsea

Physic Garden attracted a large number of the physicians who visited the annual session of the association. A recent issue of the bulletin published by this organization* is devoted to an historical discussion of the famous garden which was reproduced. Even in 1673, as shown by this report, it was found necessary to protect the physician and dealer in drugs against unsatisfactory and inefficacious counterfeits of valuable drug substances, and this necessity led to the establishment of the Chelsea garden. A greenhouse, heated by so-called "subterranean heat," conveyed by means of a brick flue under the conservatory, was erected in 1681, and in 1732 the garden was visited by Linnaeus, who states in his diary that he collected many plants in the garden and that he was given several dried specimens from South America. The Chelsea garden is still maintained, although administered by the trustees of the London Parochial Charities. In the exhibit as made in St. Louis, the reproduction followed the plan of the Chelsea garden drawn by John Hayes in 1753. To complete this demonstration, the authorities of the Missouri Botanical Garden gathered in the museum building copies of old works on materia medica and other incunabula on botanic subjects of medical interest, and also provided demonstrations on the diseases of plants. The medical profession is greatly indebted to the authorities of the Missouri institution for this practical history demonstration of botanic therapy.—*Jour. A. M. A.*, June 10, 1922.

*Missouri Botanical Garden Bulletin 10:551 (April) 1922.

PROGRESS IN THE HANDLING OF CHRONIC PEPTIC ULCER

Duodenal ulcer is treated satisfactorily by surgery according to William J. Mayo, Rochester, Minn. (*Journal A. M. A.*, July 1, 1922.) in approximately 95 per cent. of cases, although in one or two per cent. of these a second operation may be required. The ulcer is not associated with cancer liability. The average operative mortality in cases of duodenal ulcer, including the acute and chronic cases, is under 2 per cent. from all causes; and as the part of the duodenum usually involved is merely the ves-

tibule of the small intestine, permanent interference with function is slight. In cases of gastric ulcer, satisfactory results are obtained by one operation in more than 85 per cent. In the remaining cases, a secondary operation, preferable resection, which eliminates, to a great extent, future ulcer possibilities, brings the surgically satisfactory group of gastric ulcers well above 90 per cent., but there is a definite cancer liability in the years to follow. The average mortality in the operative treatment of cases of gastric ulcer, including the acute and chronic cases, is about 3.5 per cent.. The stomach has important functions to perform and a certain amount of permanent crippling may result. In about 50 per cent. of the patients who fail to obtain satisfactory relief, the difficulty is functional and can be relieved by medical management. The other 50 per cent. must be classified as surgical failures due to faulty mechanics, and will require secondary corrective surgical procedures for relief. The patients general condition must be considered and rational habits of living established. The elimination of all sources of focal infection is also an essential measure.

RELATIVE VALUE OF SURGICAL AND MEDICAL TREATMENT OF GASTRIC AND DUODENAL ULCER

The question of the medical and surgical treatment of ulcer is analyzed by Author Dean Bevan, Chicago (*Journal A. M. A.*, July 1, 1922,) in this way: Almost all ulcers in their early history should be treated medically. When they persist under good medical management, when they recur in spite of good medical management and the care which the patient can obtain in his or her peculiar station of life, when serious and repeated hemorrhages occur, when pyloric obstruction does not yield to good medical management, when there is a reasonable suspicion of malignancy in all of these cases medical management should not be too long persisted in but should give way to exploration and surgical therapy as the safer plan and the plan which affords the better prospect of cure. The cases demanding surgical treatment for their best interest would constitute about 10 per cent. of the ulcers of the chronic type.

RELATIVE VALUE OF MEDICAL AND SURGICAL TREATMENT OF GASTRIC DUODENAL ULCER

Whatever the future may reveal as to the causes of ulcer and the influences that retard its healing, these results Bertram W. Sippy, Chicago (*Journal A. M. A.*, July 1, 1922), asserts may be obtained by maintaining an efficient neutralization of free hydrochloric acid in the manner advocated by him. In his service the method has been found applicable to the rich and poor alike. After the four-week period of accurate supervision, the patient is able to take up his full work and continue with it, irrespective of its character, for the required time—a year or more if necessary. Prepared chalk, magnesium oxid and sodium bicarbonate are relatively inexpensive drugs. Except in those cases in which surgical treatment is clearly indicated, all agree that medical measures should be given a through trial before restoring to surgical measures. Sippy is sure that if the medical treatment outlined by him is applied without modifying it to an extent as to destroy its value, the necessity for surgical treatment of peptic ulcer will be very greatly reduced.

THE RELATIVE ROLES OF MEDICAL AND SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER

Relative rest, a nonirritating but ample diet, the utilization of certain simple principles as to physical therapy and simple medication, with the subsequent inculcation in the patient of proper habits of living, not only as regards diet but also as regards the proper attitude toward his environment, according to Thomas R. Brown, Baltimore (*Journal A. M. A.*, July 1, 1922), are the fundamentals of medical therapy in addition to the elimination of factors that may play a prominent etiologic role, notably focal infection and diseased condition in other portions of the abdomen. Some patients will do well on milk and cream, others on diet rich in carbohydrate, but relatively poor in protein. In some hourly feedings are beneficial; in others, longer intervals bring better results. Practically the same estimated proportion

of cures—all, incidentally, far too high in Brown's opinion, because of the improbability of correct diagnosis in certain cases and the impossibility of thoroughly following up many cases—have been reported by the violent partisans of each special dietetic schema; which should suggest that frequent feeding with any suitable nonirritating diet is the great desideratum, if the patient is given, in addition, proper bodily and mental rest. Many patients are cured spontaneously, and will be cured whatever the diet, and also many others are not cured by any diet. Psychogenic and neurogenic factors unquestionably assume a more prominent role than mechanical irritation of food, and the mitigation and elimination of these factors will do more than any one thing in bringing about a symptomatic cure at least, or in preventing a relapse. Far too little attention has been paid in the period of after cure, to exercise and other forms of physical therapy to improve the nutrition of the patient. It seems wise that all acute ulcers, except, of course, those with symptoms of perforation, be tried first with medical treatment; for the success of such treatment in this group of cases is large, and it seems wise also that, in the present state of surgical therapy, even in the chronic ulcers, except those with marked organic obstruction or with a history of repeated hemorrhage, non-surgical treatment be tried first, not because a true cure cannot be effected, because in the cause of the deep callous ulcer, with induration and cicatrization, cure, in the true sense of the word, cannot be obtained by medical means, through often a disappearance of symptoms and a symptomatic cure can be brought about; but because it seems fairer to the patient than immediate recourse to surgery, with its multiple possibilities of early and late postoperative complications. If, on the other hand, medical treatment does not bring about relief, it is foolish not to give the patient the possible benefit of surgical therapy, with resection of the ulcer, and as close an approximation to the normal physiology as possible, in the hope that adhesion formation after disturbance of gastric function will be reduced to a minimum after the operation. Chronic callous ulcer, is fundamentally surgical, and would always be surgically treated were it not for the many postoperative complicating possibilities. Many

failures are not referable to the operation as it is conceived, but as it is performed; for the technical difficulties of this work are great, and the really capable surgeons in this sphere none to numerous.

POISON PLANTS.

A this season of the year when everyone wants to get away from city life and into the woods and fields it is a great advantage to be able to recognize the common poisonous plants and thus avoid them. If you do not take the time and trouble to do this you may learn the same lesson through a very painful experience. If a person finds that he has accidentally come in contact with a poisonous plant the exposed skin should be immediately washed with a very strong hot soap suds. After rinsing and drying, the affected parts should be bathed in alcohol; or dissolve two tablespoonsful of cooking soda in half a cup of hot water and apply the cooled solution. If this is done soon after the contact often times all trouble will be avoided. Even after the inflammation has appeared the treatment recommended will do a great deal to alleviate the suffering."

FACTORS IN THE CAUSATION OF BOTULISM.

No one who has followed the recurring reports of botulism outbreaks in this country can have failed to notice that certain articles of food are implicated much more frequently than others. First come the foods preserved by heat. Since the air is expelled in the heating process and since the containers of these foods must be hermetically sealed, it is easy to see that the anaerobic conditions so produced provide particularly favorable opportunities for the growth of any *Bacillus botulinus* spores that have survived the heating process. As with other bacteria, so here growth is hindered by a high concentration of sugar or brine or by a marked acid reaction. Botulism from jam or candied fruits or from brine-pickled green olives is unknown; indeed, the disease has been very rarely attributed to the use of any sort of preserved fruit.

Since botulism from canned foods is always traceable to imperfect sterilization, to failure to destroy the spores of *B. botulinus*, it is not surprising that a relatively high proportion of

botulism outbreaks should have been traced to foods canned in the household, where facilities for maintaining cooking temperatures considerably above the boiling point are not always readily available. Commercially canned foods, however, are by no means exempt, and several instances are now on record in which foods canned on a large scale by modern processes have given rise to cases of botulism. The Kendallville, Ind., outbreak, which is described in this issue, is an example of poisoning due to a commercial product.

While the reasons for the apparently greater liability of some foods to contain the botulinus toxin are quite obscure, and while the conditions under which botulinus toxin is produced are possibly connected with the composition of the foodstuff and still remain to be worked out, there are other instances in which a plausible explanation may be advanced. It is evident that reactive ease of heat penetration must be an important factor in attempts at heat sterilization. Certain foods are much more easily dealt with in this respect than others. Heat penetration is hardly a factor in canning soups, for example. From this standpoint it is tempting to conclude that the recent outbreaks of botulism traced to eating canned spinach, such as the one at Kendallville, afford an illustration of the importance of securing adequate heat penetration. Spinach and some other foods are recognized as presenting special difficulty. There is no doubt that with such foods the size of the container and the amount of material in each can are important factors in the possible causation of botulism. It is reassuring to find that the interests concerned, including state and national health authorities, are alive to the difficulty of the situation, and that suitable standards for the size of the can and amount of material as well as for sterilizing temperatures are being strictly applied.—*Jour. A. M. A.*, July 1, 1922.

SUNSTROKE AND HEAT PROSTRATION.

Whenever a number of days of very hot weather follow in succession we usually see in the newspapers a list of people who have died as a result of the heat, and of others who have been prostrated.

Heat prostration or heat exhaustion is a collapse due to the effect of high temperature on the body. It is most apt to occur when one has undertaken heavy or unusual physical exertion. It is milder in form and less serious in its after-effects than sunstroke, which is usually cause of prolonged exposure to the rays of the sun.

In case of heat exhaustion the temperature of the patient rarely rises above 103° and may be below normal; the face is pale; the skin is cool, covered with a clammy perspiration, and the patient is conscious; sunstroke on the other hand, is marked by a temperature running as high as 110 or 112 ; the face is flushed; the skin is hot and dry, and unconsciousness comes at once, the patient often dropping as if struck by a bullet.

There are a number of things that can be done to make the patient more comfortable and to give him a greater chance of recovery. In heat prostration the person affected should be removed to as cool a place as possible, placed flat on the back with the head low and a light covering thrown over the body. A mild stimulant may be given. In cases of sunstroke, however, an effort should be made to lower the temperature of the body by ice packs on the head, ice water sponging off the body, and if necessary, a cold bath until the body temperature is lowered to around 102 and consciousness returns.

The after effects of sunstroke are much more serious than those of heat prostration. Permanent inability to withstand high temperature often results, while loss of mentality is noticed.

Prevention is better than cure. During periods of excessive heat, eat wisely, confine the diet largely to green vegetables, milk and other light foods, work but moderately, drink an abundance of water, get plenty of sleep, and avoid long exposures of the sun.—Dr. Merriam M. Biggs, New York State Commissioner of Health.

THE POTENCY OF COMMERCIAL VITAMIN PREPARATIONS

Owing to the rapid growth of the traffic in commercial vitamins, E. V. McCollum and Nina Simmonds, Baltimore (Journal A. M. A., June 24, 1922) examined some of these preparations for their potency as sources of the most stable

of these, the water soluble B. or vitamin B, the antineuritic substance. Any one who is familiar with the chemical properties of the vitamins knows that there is little prospect of making concentrated preparations of any vitamin, other than water soluble B, which contain any more active substance than is obtainable in certain foodstuffs that are easily procurable. It is, in fact, the water-soluble B or antineuritic substance, the vitamin C, is so unstable that it would seem to be impracticable to obtain it in concentrated form for use as a substitute for fresh vegetable foods, which are in general, very rich in it. The authors have tested six of the products for vitamin B which have been more or less widely advertised, and they present the results of their studies. An examination of the labels on the containers of the vitamin preparations studied suggests at once that their promotion for therapeutic purpose represents a repetition of the "patent medicine" frauds which have for so long been perpetrated on the American public. Thus, the same list of symptoms that were listed on the sarsaparillas, blood purifiers, kidney remedies, remedies for female weaknesses, etc., reappear as conditions for which the vitamin preparations are said to be specific remedies.

LAXATIVES.

Laxatives.—Untoward Effects of Laxatives.—Lately a number of instances of untoward manifestations due to the use of phenolphthalein as a laxative drug have been brought to the attention of physicians, particularly by dermatologists. Now Underhill and Errieo have demonstrated that when magnesium sulphate, sodium sulphate and potassium and sodium tartrate are administered experimentally in doses capable of producing diarrhea, a distinct concentration of the blood may take place. The fact that purgatives exert a definite influence, in the direction of concentrating the blood, indicates that care should be exercised in the administration of purgatives in disease conditions, especially in those conditions known to be responsible for concentrated blood. Blood concentrated to some extent, and yet not sufficiently concentrated to be dangerous in itself may reach a dangerous concentration by the added influence of the purgative. (Journal A. M. A., June 24, 1922, p. 1964)

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Stop at once the giving of milk.

Thoroughly clean out the intestinal tract.

Give nourishment composed of food elements capable of being absorbed with minimum digestive effort.

A diet that meets the condition is prepared as follows:

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Water (boiled, then cooled)	.	.	16 fluidounces

Feed small amounts at frequent intervals.

It is further suggested:—As soon as the stools lessen in number and improve in character, gradually build up the diet by substituting one ounce of skimmed milk for one ounce of water until the amount of skimmed milk is equal to the quantity of milk usually given for the age of the infant; also that no milk fat be given until the baby has completely recovered.

Mellin's Food Company, Boston, Mass.

BOOK REVIEWS.

THE HEALTHY CHILD FROM TWO TO SEVEN.
—By Francis Hamilton McCarthy, M. D., Assistant Professor of Diseases of Children, Boston University. The McMillan Company, 1922.

This little book of 226 pages is designed to be a handbook for parents, nurses and child welfare workers. It is an unfortunate fact that too little attention is paid to the welfare of the children from infancy to the school age and it is evidently the intent of Dr. McCarthy to present in concise and simple form the facts of practical value in the education of the general public to the promotion of health among children of this age period.

The text presents in practical form the essentials of physical care and thought, it goes into details of diet and management in a way that will give the reader a practical working knowledge rather than a theoretical ground work of principles, a method of treatment which in large measure determines the actual value of any effort in health education.

By way of criticism it may be said that some of the diet lists would need modification for use in the South where high summer temperature complicates the situation to a greater extent than in northern latitudes. For instance, in the writer's opinion one should be very careful about adding even small amounts of "soft cooked eggs, spinach and toast" to the diet.

E. L. B.

TUBERCULOSIS IN INFANCY AND CHILDHOOD.—By J. Claxton Gittings, M. D., Professor of Pediatrics in the Graduate School of Medicine, University of Pennsylvania; Visiting Physician at the Children's Hospital, Philadelphia; Assistant Pediatricist at the University Hospital.

Frank Croer Knowles, M. D., Professor of Dermatology in the Jefferson Medical College; Clinical Professor of Dermatology in the Jefferson Medical College; Dermatologist to the Presbyterian Children's Hospital; Chief of the Skin Dispensary in the Pennsylvania Hospital.

Astley L. C. Afhurst, M. D. Associate Professor in Surgery, School of Medicine, University of Pennsylvania.

J. B. Lippencott Company, Price \$5.00.

This book is based upon a course of lectures which were delivered at the Children's Hospital, under the auspices of the Philadelphia Pediatric Society and attempts to present from the viewpoint of the pediatrician the essentials of the diagnosis and treatment of tuberculosis in early life. The statement that "the trend of modern medicine is toward prevention . . . and the modern physician who is not familiar with the principles and practices of prevention . . . is essentially untrained" illustrates the viewpoint of the authors. It is further stated that the chapter on "Prevention of Infection" might be written within the limits of child life .

. . . and properly speaking, prevention of tuberculous infection is first of all a function of the obstetrician" since his entree to the home before the birth of the child should give him opportunity to determine potential tuberculosis foci.

When the medical profession begins to realize the truth of the first statement the responsibility resting, not only upon the obstetrician, but upon the whole profession that is implied in the second statement then and not until then will really constructive work in the solution of this problem begin.

In the main the book is well written, concise and thorough.

E. L. B.

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THE RELATION OF THE INTERNIST TO DISEASES OF THE EYE, EAR, NOSE AND THROAT.*

LOUIS M. SCOTT, M. D., JELICO.

IN THIS AGE of specialization in medicine the tendency is to become too exclusive, forgetting the common ground that should exist between the internist and the specialist. While we recognize the great advances along the line of specialization in medicine, and the advantages resulting therefrom, yet we must not overlook some of the disadvantages which are apparent to us all.

With the meetings of the American Medical Association made up of the various sections, interested in the special subjects of each, with the same plan, though to a less extent, existing with reference to the meetings of the state societies, to say nothing of the local societies with a tendency in the same direction, there is danger of too much emphasis being put upon a single subject and overlooking the relation to the whole field of medicine. If more papers by specialists were read and discussed before sections in general medicine, where it would seem that they are needed most, rather than before special sections, and before men who often-times need them least, more mutual benefit could be accomplished. The same statement with reference to papers of kindred nature by the internist read and discussed before special sections, might be said to hold good also. If we would study our borderline cases, those presenting vague symptoms, more from the internist's viewpoint, no doubt fewer mistakes in diagnosis

and treatment would be made, and thereby avoid the danger of becoming a lop-sided specialist, so called. The more exclusive we become the less the advantage to ourselves and benefit to our patients will be the result.

The tendency of the average internist is to underestimate the important relation that diseases of the eye, ear, nose and throat bear to internal medicine. It is a lamentable fact that the average general practitioner has not advanced in knowledge pertaining to these diseases beyond that gained as a medical student. Especially is this true with diseases of the eye and ear. How to get a closer co-operation between the specialist and the internist is, indeed, a vital question. The important fact to us is that the internist is usually the first to see the patient suffering from such diseases, and too often their complication. While in most instances, no doubt, it would be very much to the patient's advantage to seek the aid of a competent specialist for treatment for the special disease from which he may be suffering, yet disadvantages may come to him from such action. In other words, he should be directed by his family physician in such action when he is competent to advise. Dr. Barker, of Baltimore, in a recent article in the Journal of the American Medical Association, brings out this point so clearly that I desire just here to quote him. With reference to patients independently seeking the aid of a specialist, he has this to say: "Patients may, through their own initiative, seek out specialists who are not needed by them at all or who are in a position

*Read before the Section on Ophthalmology and Otolaryngology, Tennessee State Medical Association, Memphis, April 11, 1922.

to satisfy only a part of their medical needs, and often the least important part. This tendency of patients independently to resort to specialists is to be depreciated. When there is need for a consultation with specialists, or for a general diagnostic study by a team, the patient should be guided in his selection of a specialist or team by his family physician. Unfortunately, the general practitioner has, in the past, sometimes been to blame in not recognizing early enough the need of special examinations or team diagnosis in certain of his cases, and this has contributed to the tendency of self-direction among patients. The remedy lies in education of both the general practitioner and the public." I am fully in accord with the views of Dr. Barker as expressed in the foregoing statements. We should recognize, at all times, the middle ground existing between the internist and the specialist. Reports of the progress of the case and an insistence upon the patient's final return to his family physician for further oversight, should be an established custom with the specialist. The fact that the general practitioner first sees most of the acute affections of the eye, ear, nose or throat, indicates to us the importance of a better general knowledge of such troubles upon the part of the internist. Many patients might be saved the inconvenience and expense of going to the specialist later, if they had the advantage of better informed men, in this respect, to administer treatment for them in the beginning of their trouble. And, upon the other hand, cases needing consultation and special treatment would be referred to the specialist before serious complications arose, and in many instances, permanent damage done.

My observation has been, that there are two extremes among the general practitioners: those who do not wish to assume any responsibility in the matter of management of these special conditions, referring them all to the specialist; and those who, either through lack of knowledge of the gravity of the case, or perhaps prompted by mercenary or other motives, continue to treat the patient until all hope of preventing a serious consequence, by any method of treatment, is passed. In view of a possible serious termination of a case, the former should be looked upon as the safer of

the two.

In no other branch of the work of the eye, ear, nose and throat specialist, does he meet with the evil consequences more, due to lack of proper management of the case in the beginning, than he does from those of acute middle ear infections. Practically all cases of chronically discharging ears, mastoid complications and chronic deafness, resulting from this source, could be prevented if the right methods of treatment were instituted in the beginning of the infection. It has been stated by one prominent aurist, "that it is a self-evident truth, that in ninety-nine per cent of cases of chronic discharges from the middle ear, is final and conclusive proof of ignorance or neglect on the part of the individual, his family, or not infrequently, his physician." Very few internists of today will fail to diagnose early a case of appendicitis or other troubles within the abdominal cavity demanding surgical interference, yet these same men will, as a rule, fail to inspect a drum membrane in the case of a child suffering from any of the acute infectious diseases involving the upper air passages, when such cases present unmistakable evidence of acute otitis media, manifested by such symptoms as restlessness, continued fever, etc.; and will allow a drum membrane in such condition to rupture, and the case often times, goes until serious complications take place. It is, indeed, a strange fact that many physicians, as well as the laity, consider a discharging ear as a matter of no consequence. We frequently have children brought to us with discharging ears of long standing, whose parents tell us that they were advised by their physician to let the trouble alone, as the child would outgrow it. A greater fallacy in medicine could not be imagined. Little wonder that we have so many incurable ear cases. Such patients would have been much better off if no advice at all had been given by the physician. A discharging ear should always be looked upon as a dangerous pathological condition. Insurance companies have recognized this fact, and will not accept, as a safe risk, any applicant for insurance who is so afflicted. The very fact of the close proximity to the dura, lateral sinus and other important structures of the head, renders a suppurating middle ear one of extreme danger.

Then, too, we have in these suppurating middle ear conditions, a very poor means of natural drainage, owing to the narrow and circuitous route of the passage of outlet, thus adding serious inconvenience in treatment. If the general practitioner could be brought to see the importance of a systematic examination, under good illumination, of the ear of a child suffering from any of the acute infectious diseases, and when a case of otitis media was observed, as manifested by redness and bulging of the drum, he would at once incise the drum freely, fewer cases of chronic middle ear diseases would be met with in the future.

What is true with respect to early recognition and proper treatment of diseases of the ear, is also true as to certain conditions of the eye, nose and throat, though, perhaps, to a lesser degree. Some of the most frequent troubles of the eye that the specialist has to deal with, are those resulting from infection through the cornea, as a result of neglected or improper treatment of eye injuries. Much has been said and written upon the subject of treatment of eye injuries, yet injured eyes continue to come to us with the eye so deeply infected that it is difficult or impossible to save the vision, and often times where it becomes necessary to sacrifice the globe. Another common eye trouble, of which the internist should be better informed, is eye strain. Many aggravating and complex reflexes of the sympathetic nervous system can often be traced to this cause. Many of these cases come to the oculist of their own initiative for relief, after having been thoroughly drugged to no effect, when the true cause of their trouble should have been suspected by their physician and the patient referred to the oculist. Some of our most grateful patients are those we relieve from a painful condition of the head by the proper adjustment of lenses to the eyes. A greater interest, however, is being manifested by the internist with respect to the relation eyestrain bears to certain painful reflex troubles, and more of them are referring such cases to the oculist, after they have failed, in due time, to cure them by internal medication. I believe it would be safe to state that at least fifty per cent of the cases of recurrent types of headache are due to eyestrain. And it should be generally

understood by physicians, that the fact that the patient may be wearing glasses, is no certainty that he or she is not suffering from some uncorrected error of refraction. It has been stated by some of the leading ophthalmologists that at least fifty per cent of persons wearing glasses are using lenses not properly fitted or adjusted. I believe that if we will make a thorough examination and comparison of a given number of patients coming to us with glasses we will find this statement not far from the truth. In such statement it is understood, of course, that we include those cases fitted by optometrists, opticians and spectacle venders. What a sad fact that a condition so important as errors of refraction is allowed to be treated by men who know little in regard to the delicate mechanism of the eye or the cause of its visual defects. When a physician refers his surgical cases for operation, he is very careful to select a man whom he considers endowed with surgical skill, yet how little concern, as a usual thing, does he show in the matter of having his patients suffering from eye strain, scientifically refracted and the proper lenses prescribed.

This brings us now to certain nose and throat conditions, the early recognition and treatment of which would save the patient much inconvenience and suffering as a result of later complications. The nasal accessory sinuses, we know, of course, are never involved primarily, but when one is affected it is due to the extension of a primary inflammatory process in the nasal cavity. The inflammatory condition extends by continuity and partakes of characteristics of the inflammatory process going on in the intranasal mucosa. The fact of the small calibre of the openings from the sinuses, thereby preventing adequate drainage and ventilation, causes inflammatory conditions in the sinuses to differ materially from like conditions in the nose. Viewed in the light of the foregoing facts, it is quite evident that the best method of preventing sinus infections is by early and proper local treatment, however, the average general practitioner begins to dose his patients, suffering from acute nasal affections, with all sorts of internal remedies, when the seat of the trouble is a local infection in the nose. The result is that the patient's stomach is upset and his

vitality lowered while the infection of the nose, or naso-pharynx, continues to extend, and often times into one or more of the accessory sinuses. How much better the results would be, both in the matter of a cure of acute head colds and other infectious nasal troubles, and the prevention of sinus involvement, if the nasal passages were frequently cleansed with a warm alkaline antiseptic solution by means of the douche, followed by the application of a soothing and protecting nasal ointment or oil, containing a small per cent of camphor-menthol. I wish in this connection to condemn the use of self-treatment by the use of the nasal atomizer. The patient usually directs the spray solution either against the inflamed mucous membrane covering the septum or turbinates, thereby injuring the delicate epithelium, with a chance of spreading the infection rather than relieving the trouble. By far the simplest and most effective method of cleansing the nasal cavities in these acute inflammatory conditions, is by means of the nasal syphon douche. This can be arranged by the use of the ordinary fountain syringe to which is attached a glass nasal tube. A second piece of rubber tubing with the nasal attachment is applied to the other nostril after the solution is allowed to flow for a second or two. The return flow is caught in a basin upon the floor or into the bath-tub. The amount of suction produced is in proportion to the length of the second or syphon tube. By this method the returned mucous is not only drawn from the nasal passages, but from the sinuses as well. After each douching, as stated before, some bland oil preparation should be applied to the mucous membrane by the aid of a nebulizer or cotton applicator. In case of sinus involvement resulting from nasal infection, and the drainage becomes interfered with as a result of swollen condition of the nasal mucous membrane, this can, in most instances, be relieved and the drainage re-established by the application of a nasal tampon containing a solution of cocaine and adrenalin, placed so as to include the nasal outlet of the passage from the sinus. This simple method of relieving such conditions should be known and practiced by the internist whenever necessary.

I shall not attempt at this time to take up

the question of tonsils and adenoids, as I realize that to do so would be treading upon dangerous ground, and besides we are admonished by our Secretary to exclude tonsils from any subject presented at this meeting.

I am mindful of the fact that this subject is one of too much magnitude to try to cover in one short paper. I trust, however, that I have succeeded in presenting to you some of the salient points in such a way that it will merit an interest and provoke a discussion.

DR. GEORGE H. PRICE, Nashville.--Mr. Chairman, and Gentlemen: The paper presented by Dr. Scott is timely and important. There is nothing that the specialist has to do or to contend with, that is more provoking and aggravating than delayed conditions which might have been easily treated primarily, which have become more or less complicated by reason of delay. In this day and time there is scarcely any excuse for that, with the general medical profession living in the larger centers, and in many of the smaller towns, where there are men now who are giving their time and attention to this particular field of work, in special lines. However, it is not an easy thing to convince the general practitioner of this, nor is it an easy thing to induce the parents, or the individual, to go to some one who can look after them and give them the necessary attention. So far as the eye is concerned, the diseases of the eye are so much more easily recognized than any others, that parents themselves, if the patient is a child, become alarmed, and they seek help at the hands of the specialist sooner than for almost any other condition which falls within the field of our practice. And yet they allow these conditions, sometimes, to go on for some length of time, without any interference, except by the simplest methods and procedures carried out at home; and many times it is difficult for the physician to induce parents—now the reason I speak of parents and children more especially is because the conditions which arise in those who are not sufficiently experienced to select some one for themselves, are those which, give the greatest amount of trouble.

The observations of Dr. Barker are all right, so far as the treatment of these conditions is concerned, in the larger cities; but in the smaller places we do not always have a number of men who can be called in easily to consult in regard to any particular matter. The result of it is the general practitioner, in some of the more remote districts, must depend on his own judgment. The trouble about the general practitioner, as a rule, is that he regards these things, especially if he is nearby where some one else can be consulted, as lying without his province of practice, and advises that they be taken to some one, but they are not taken. We see

many cases that have been delayed, all sorts of cases about the eye; and in this day, since we have had growing up in the community, and licensed by the State—quite an unfortunate condition—the optometrist, who is a menace to the public, oft times we find conditions which primarily might have been put in the hands of the proper practitioner, yet we are allowed to go on for such a length of time that the hope of doing the patient any good is past. We see that not infrequently, I have, at least, in a number of instances in the last few years, at Nashville.

We have learned a great deal more in the last few years with regard to complications about the eyes, so that now the ophthalmologist and the internist can bring relief to patients frequently which heretofore were not regarded as possible of relief. Sometimes those cases pass on from optometrist to optometrist, and from specialist to specialist, because the patient failed primarily to consult some one who knew what to do.

Now it would be impossible for us, in a general discussion running over all this subject, to stop and give anything like detailed consideration to each patient. It would be better to discuss this paper before the general practitioners than before this audience, as suggested by Dr. Scott.

The trouble we have experienced in handling middle ear cases—the Doctor called attention to that, is one of the most frequent sources of serious trouble that comes under our observation. He has intimated, in fact said, that many people regard an acute inflammation in the middle ear as something which is incident to childhood, and as of no material consequence. He has also stated, which I believe is true, that an inflammation in the middle ear, is the most serious simple inflammation which we can have at all; it is the most dangerous location for trouble, it is not easy to get at; it is difficult, sometimes, to relieve, and the complications which arise in some of these cases are the most disastrous that can come to our patients. And the old idea, as has been suggested by Dr. Scott, namely; that the discharge of the ear will take care of itself, and the child will outgrow it, is one of the greatest fallacies. Generally they suffer with an acute inflammation in the middle ear, with the rupture of the drum membrane, and a discharge, and in a few days the rupture would close and the patient would be well in a short time; but that was just a simple catarrhal inflammation, and not of any serious moment. But the purulent condition, especially in such cases as scarlet fever, whooping cough, measles, and pneumonia, becomes serious almost from the very beginning, and unless it is relieved it is a constant menace.

The suggestion that Dr. Scott has made, that every physician should be able to look into the auditory canal to get the condition of the drum membrane is a good one; but it is not every man that can look into the auditory canal and see the drum membrane and tell what is the matter with it; and it is not every specialist that can tell the time which is best, if necessary at all, to puncture or

incise the drum membrane. I recall with a good deal of distinctness that it was formerly regarded as better practice to delay the opening of the drum membrane until it became an absolute necessity to do that. I think that day has passed. There are some methods of treatment, however, that can be resorted to, in these simpler inflammations of the middle ear, which I think are almost sure to relieve the patient, if his condition is one of simple irritation or inflammation in the middle ear, in the wake of a cold, or a little edematous condition, for often we can relieve such by hot irrigations in the ear or in the nose. I am in favor of opening the drum membrane when it is necessary. The trouble with these cases is, we know, not that they will not close promptly, but frequently that they close up too promptly and sometimes have to be reopened.

However it is not an easy thing for the general practitioner to incise a drum membrane. I remember on one occasion discussing this question or some similar question before the Academy of Medicine of the City of Nashville, when a very prominent physician, not a member of the profession there, who had experience, said that he could open a drum membrane in the dark without anything at all, a head mirror or anything else; all he needed was the man's ear, and a knife. I would not let any man operate on me that would do that. I think it is a dangerous procedure, a bad practice. But I think it is well for the practitioner to keep in touch with some one in his community who can do this little, but very necessary operation; sometimes you can not get a specialist; sometimes a condition has arisen when you can not get a specialist, and the child is already in a serious condition the first time they present themselves in the office.

I recall one or two cases of that kind where the patient had already passed the point where local treatment, and perhaps surgical interference, would do them any good, and they went on and died from the effects of involvement of the brain, which might have been prevented earlier in the case.

Now as to eye injuries.

Eye injuries are positively occurring all the time, every day, on the streets, in the workshops, on the railroads, and even in the homes. My experience has been this: that with the average general practitioner, for small eye injuries, his treatment as a rule, is inefficient. The removal of a foreign body, which I regard as a very simple thing, and everybody else does, yet is one of those things which very few men, unless they have had experience, can do. If they do it, they do it ineffectively, the simple knocking off of a foreign body from the cornea of a patient, especially if it is iron or steel is not sufficient; it requires more than that.

I think another thing that has been a great cause of complaint amongst the people, and a source of disappointment, is the fitting of glasses by the optometrist. Some of the saddest cases that I have ever seen were men who had been resorting to the optometrist for the fitting of glasses, when that was the very thing that they did not need. They needed something else, and when the state of vis-

ion had reached the point where the optometrist could not improve it by any glasses he might use. It was suggested that they see a specialist, and they turn up with an involvement, not only of the eye, but of something else, such as kidney complication, which, if discovered in its incipency, something might have been done, but when seen too late, is beyond recall.

DR. W. W. POTTER, of Knoxville.—Mr. Chairman, there are just one or two things I want to emphasize in Dr. Scott's paper. I, like Dr. Price and Dr. Scott, think a paper of this kind should be read before the general session, so the general practitioner would get the benefit of it.

The thing I wanted to say is that I believe that every doctor, no matter where he practices, if he is in a rural community, there is a certain number of people who are absolutely depending upon him to look after them, not only when they have typhoid fever, but when the child has ear-ache. I believe that any doctor who practices medicine in any community, no matter how far back from the greater or larger centers he is, should be able, and should have had such training as would enable him to look into a child's ear and determine whether or not it was necessary to incise that drum, and be able to incise that drum in the right way. He should be taught the use of reflected light, because his people are depending on him; they cannot go to a specialist; they are miles away. By the time they could go to the specialist, this child has had a rupture of the drum membrane, and possibly after that occurs he never gets any special attention; they let this ear go on and on indefinitely because it does not pain the child, and consequently he may have and is apt to have some of these bad things that come from neglected ears.

I also believe that any man who is practicing medicine, no matter what locality he is in, should be able to remove a foreign body from the eye. I believe any doctor can boil an instrument, no matter where he lives. I believe that any doctor should know how to illuminate a cornea, and his training should be such that would enable him not only to incise this ear drum membrane in the right way, but also to remove a foreign body from the cornea, and to do it in an aseptic way. He should also know enough to know how to instill atropine, or esserin into an eye, to prevent an adhered pupil, in a punctured wound of the cornea, for instance. You know that if the iris should become adhered to the wound, if it is not cared for in the proper way, what the result to vision will be. Any country doctor, I believe, should know enough to put atropine in the eye, and if possible to pull that iris away from the wound. I do not believe because a man is in the country, or in rural communities, that he should have the idea that "I am not a specialist, and I should not tinker with these things," but he should learn to do these things, and do them well; just like he should learn to set a broken bone or reduce a dislocation.

Just those one or two points are those I wished to emphasize in Dr. Scott's paper.

DR. RICHMOND MCKINNEY, Memphis.—Mr. Chairman: I would like to speak to one point brought out in this paper, that is, with respect to catarrhal inflammation of the middle ear, and the question as to when the drum should be opened. I desire to deprecate the common practice of immediately opening a slightly inflamed drum in the presence of an earache, which of course is the term by which the common type of catarrhal congestion of the middle ear is known. In my opinion the ear drum should not be opened under twenty-four hours of onset of symptoms, unless these later should be very pronounced, such as great pain, high temperature and a very congested membrane. Almost invariably, especially where irrigation is practiced after the membrana is opened, there will follow an infection of the middle-ear cavity, the infective matter going from the external auditory canal by way of the opening in the membrana, and purulent otitis media, sometimes of long duration, and occasionally going to a mastoiditis, will be the result. Treatment of the catarrhal congestion of the nose and throat, giving the congestion an opportunity to subside and the mucus to drain from the inflamed middle ear through the drainage canal, the eustachian tube, generally will relieve these cases. Only this morning I was called to see a child who had awakened before the day with a pronounced earache. When I saw him he had a slightly flushed membrana, but the ear no longer pained him. Had he been seen an hour earlier, when the drum was more or less congested, there would have been sufficient indication as commonly practiced, to incise the membrana. Some pediatricians open the ear drums, and while I would not deprive them of the emolument which they may derive from this, I do urge them to be more conservative, and to give the ear a chance to drain through the natural passage before making an external opening and inviting infection. When an ear-drum is opened, irrigation should not be commenced immediately, for, as I have already said, this is likely to carry infection into the middle-ear cavity. After thick pus has begun to flow, irrigation then does no harm, if properly done. We must not teach doctors practicing in the rural districts, who are not accessible to specialists, to plunge a knife into every congested membrana without first having waited a reasonable time for the subsidence of the symptoms of earache.

Recently I was reading in the Laryngoscope a discussion on this very subject that took place at a meeting of the Otological Section of the New York Academy of Medicine, and practically every otologist who participated in this discussion expressed the same conviction which I have just voiced.

DR. OLIN WEST, of Nashville.—I hesitate to accept this courtesy, because I don't want to impose on your time. I did say to Dr. McKinney, however, that there were some things not directly concerned

with this subject which I should like to discuss and that this would be my last opportunity to say anything at all to this Section. Some of you know, some of you perhaps do not, that for twelve years I have been engaged in public health work in Tennessee. We have gotten to the place in the State Board of Health where we have an organization that is really doing something, or trying hard to do something, for the health of the state. We have four field units at work in rural counties. We have examined thousands of school children. The examination has not been at all complete, and we have not pretended that the examinations that have been made are adequate, but we have tried to determine the conditions with reference to the vision, the hearing, and the nose and throat conditions of the children in the schools that we have had opportunity to get into.

We have had some success, in certain quarters, in getting many of these children into the hands of competent men for corrective treatment; but our big question is, what shall be done, and what can be done, for the child in the rural, and especially in the more remote counties? There are very few of these counties in the state in which there are located physicians at all trained to deal with these conditions which require the attention of specialists. There are hundreds and hundreds of children in those counties that are in need of treatment, and who would be glad to have treatment, if treatment could be brought to them. I looked out of my office window in Nashville the day before I left the State Board of Health, to see one of our nurses drive up in a Ford automobile with eight children from a nearby county, whom she had brought in to Nashville for treatment—some for removal of the tonsils, two for correction of vision, and others for other things. Those children were from the hill country in a county next to Davidson. It was an easy matter to get those eight children into the hands of competent men for treatment, because Nashville is nearby. But what are we going to do in Hancock County, and in Fentress County and in a number of other counties in which there are few doctors and no ophthalmologists nor otologists, and no city near at hand? Those children are there; they are of the purest unadulterated American stock that is to be found on this continent, and are worth saving from disease and its consequences. When they are given opportunity to develop they make the most wonderful citizens. They appeal to a man who is really interested in humanity like no other group of children on the face of the earth will appeal. What can we do with them?

I have been disturbed very considerably over the situation which we found with respect to diseases of the eyes of the country school children in many of the counties of this state. I do not know whether it is trachoma; and I sometimes think that none of the rest of us know what it is. One of the failures that we have made, and one which I have much regretted, is that which is involved in the fact that we have not been able to get the right kind of help

in settling this difficulty of diagnosis. We find children with what men who are supposed to know call trachoma. We send them or get some of them into the hands of the specialists, our own men, and they say it is folliculosis. Sometimes we find Willie or Jimmie or Bettie in school with this condition, and when we get to the home where Bettie or Jimmie lives, we find Aunt Sallie sitting up in the chimney corner with pannus. I don't know whether what we find in these children has any connection with Aunt Sallie's eye condition or not; but we ought to find out. I have had the most wonderfully helpful response from the men of this section to my appeals in this problem; but unfortunately every time we have tried to do anything definite something has happened that has prevented the making of the surveys which we hoped to make to determine just what the situation is and what needs to be done.

The suggestion that I want to make, Mr. Chairman, and the final message that I want to leave, before getting out of Tennessee—where I would like to say that I would rather be than any place on this earth—is that this Section, and this Tennessee State Medical Association, should go to work now, and devise some plan whereby the child in the mountains of Carter County or Roane County, or in the depths of Hardin County or Wayne County can somehow receive the treatment that he needs to give him the nearest possible to an equal chance with a normal child. There are many of them that can not pay for such service; there are many others who can pay something and who will pay, but who can not go to Memphis, to Nashville, to Chattanooga, or to Knoxville; and there are many others who can pay, but who will not go to Memphis, Nashville, Chattanooga or Knoxville, but who would be glad to have treatment were it brought to them.

There has been a great deal of condemnation of public clinics; some of it has been perhaps just to an extent; a great deal of it has been absolutely unjust. People in our cities have found out a lot about medicine and its benefits; they have found out that many things can be done for their benefit; and I want to tell you that they mean to have them done somehow. The people in the country are learning, too. They prefer to have them done by the reputable members of the medical profession, but they are going to have service of some kind, and if they can not get it from us, they are going to have some kind of service from somewhere. That leads me to tell you of an experience that we have had lately. Optometrists are prowling about the country fitting glasses to normal eyes and to abnormal eyes, and doing damage in either case. We have two children that we have found in country schools lately wearing glasses secured from traveling optometrists. Testing their vision with their glasses on, showed it to be considerably below normal. Later tests with their glasses off showed normal vision. I know of other instances where these vicious fakers took glasses out of grandma's frames, wiped them off and charged her fifteen dollars, pretending to have

put in new lenses. Things are going on like that all the time. It seems to me that some plan ought to be devised, and there are brains enough and willingness enough in this organization to devise the plan, that would afford treatment to those who are denied proper treatment under present conditions. I believe that this Section should establish a service of some kind in every section of the state, in connection with local medical organizations that would reach this situation, if the thing was taken up and carefully worked out.

I am very grateful, Mr. Chairman, for the opportunity to say these few words to the Section. I want to express my appreciation for the work of this Section, formed during my service as Secretary, which I believe has been a most helpful factor in the advancement of the Tennessee State Medical Association. I hope that this Section and our Association will go on to greater achievements and that your individual lives will be full of happiness always.

GEORGE E. SHAMBAUGH, M. D., Chicago, Ill.—This is a subject about which a great deal may be said. The problem of the relation between specialist and general practitioner is quite different in rural districts than it is in a large center. Those who work in larger cities come in contact with certain types of difficulties. Those of you who work in smaller, more or less rural communities, have difficulties of quite another type. The harmful thing which impresses one working in the city is the practice of general practitioners coming to our special clinics, spending enough time to find out how to go about two or three of the operations in the special field and with no appreciation whatever of the proper indications for those operations go back to their general practice and begin doing these operations. Such men can not avoid the risk of doing unnecessary, harmful surgery. The other aspect of the subject which has impressed me and one to which the essayist has already called attention, is where the man prepared particularly for doing special work proceeds to assume a responsibility for the medical care of patients quite apart from the local trouble. A man who is prepared, for example, to do the work in otolaryngology, may be able to do this work very well but this does not mean that he is able to handle the problems which the internist takes care of, cardiac trouble, kidney trouble, etc. It happens very often that patients come in and report that they want their tonsils taken out. You inquire what is the trouble and

they say that they are not conscious of any tonsil trouble but have been told that their general condition is bad. Now maybe this is true and maybe it is not. The decision here is not one that the otolaryngologist is best prepared to answer. The proper handling of that case is unquestionably to refer him to a competent internist. If after his examination the patient is returned with the request that examination be made for some possible focus of infection, then I believe the problem is best taken care of by the specialist making a report on the conditions which present themselves in the tonsils and allow the internist to share the responsibility of whether under the circumstances this type of tonsil should be taken out. My own feeling is that the specialist should assume this responsibility only in cases where the local findings are in themselves sufficient to warrant the removal of the tonsils, but in all cases where the indication is the possibility of some general systemic infection, here I feel that the surest way to avoid unnecessary operating is to share this responsibility with the internist.

DR. MARCUS FEINGOLD.—If the Chair had called on me before Dr. Shambaugh spoke, I would have said the same thing. Now, I can only say—

CHAIRMAN CAYCE.—He stole your thunder?

DR. FEINGOLD.—I feel most frequently, granting all this that the essayist and the others that spoke after him have said, as being perfectly true, that we must not forget that the specialist has to 'clean house first. A good many of us often forget that when a patient calls on us for a primary eye, or ear, nose or throat condition, that we must not forget that we have to treat only the eye, ear, nose and throat condition, only that, and must leave every general treatment that may be needed entirely in the hands of the family physician, or the internist; otherwise, we are simply treading on foreign ground, we are acquiring things that do not belong to us; and we certainly cannot, with any justice, blame the internist if he, on his side, oversteps the border line. Let us, then, be always careful in each case of nephritis, or in a case of angiosclerosis, diabetes, or long protracted chronic conditions, not to forget to turn the patient over to his family physician for treatment, and resolve to ourselves only the right to inspect, correct and watch over the special symptoms for which we are claiming mastery.

DR. L. M. SCOTT, (Closing Discussion).—Gentlemen, I thank you for this kindly criticism of that paper. Of course we realize that the right question

is how to get this co-operation between the specialist and the internist. Now, we know, of course, that this paper, although very elementary, should have been read before the other section; but if you read a paper before the general session on any special subject, you meet with very poor response.

Now, the question as to how to get a closer co-operation between the specialist and the general practitioner, in regard to these cases that are in the primary condition, where they could do so much in the way of preventive medicine, that will have to be worked out, and I hope it can be done.

Before I forget it, I want to refer to Dr. West's statement in regard to the poor and rural sections where the children are needing special attention. I do not see why this Section could not establish some program similar to that of Dr. Stuckey, of Lexington. He organized, he had his unit, his assistants, his nurses, and he traveled all over the mountain section of several counties in southeastern Kentucky, and there he stayed on the job until he cleaned up all those trachoma cases and other eye conditions. Of course he did that gratis, some people think for a kind of advertisement matter, but I do not think so; I think it was a love to help relieve those poor cases. I do not see why Tennessee could not do the same thing. This body of men here could take—say some specialist, could take his nurses and assistants and go out to certain outlying districts and there he could stay for several days, and improvise a hospital, and there treat those cases gratuitously.

Now, in regard to the statement as to incising the drums that were inflamed from simple catarrhal otitis media, if you will note, Dr. McKimney did not hear the paper read, but I referred to those conditions that are due to inflammatory conditions from infectious diseases. Then of course it is due to

different conditions, where you have this bulging, inflamed drum, due to infection, there is where it should be incised freely and early, in every simple catarrhal inflammation, those cases we know subside frequently without interference.

Dr. Potter referred to the internist using a mydriatic or a myotic. I do not think they ought to do that. They generally put it in the wrong patient's eyes, generally the older people; especially the use of atropine. I do not believe it is very safe to have an internist tamper much with that; but when it comes to treating eye injuries, practicing in an industrial section, I find so many of those cases coming neglected, or the eye infected badly, and serious trouble, without the right kind of treatment being administered and using a method to prevent infection.

Another trouble, the internists in my section fall down on so much is furunculosis, or internal affection of the ear. I have had several cases come to be treated with mastoid, and in one case I was called into a neighboring town for consultation, the doctor was getting ready to send the patient to the hospital to have mastoid done. She had been in bed a week, suffering intensely, and giving her morphine—never thought to look at the ear. He said it was mastoid. I found, of course, by looking in the ear, that it was purely a case of furunculosis, and by incising the furuncle, the patient got relief. In a case where a specialist was sent for, I think this was a child specialist, he came to see the child with pneumonia, found a bulging of the drum and middle ear trouble, and gave the proper treatment to the drum, which gave relief.

So it seems to me that the general practitioner should be taught to look into the ear, and where there is that simple condition, to relieve it.

MORE CONSERVATISM IN MEDICINE AND SURGERY.*

V. E. MASSEY, M. D., HUNTINGDON.

SEVERAL years ago, when I was a small boy, I can remember that our family doctor was held in very high esteem by all of us. We honored him as no other man in the entire community was honored and respected. We thought that physicians were not only good, honest men but very capable and wise men. Today, I am quite certain that we are much better qualified to practice medicine and surgery than were our predecessors but I am very much afraid that the pedestal on which we stand, in the eyes of the laity, is not quite

so high as it was a few years ago. What is the reason for this? I believe it is due to a perverted idea of the relationship that should exist between doctor and patient. Our profession is one of service to mankind. Service should be the keynote to every Doctor's life, and I believe that if we will view each and every case that comes to us through the eye of the best possible service to our patient, we will not only more firmly establish ourselves in the hearts of the laity but we will be better Doctors and make fewer mistakes.

In taking up this subject please be it understood that I am making no effort to discourage

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experimental medicine and new ideas but simply in my feeble way I desire briefly to issue a slight note of caution against a few of the many fads and fancies in medicine and surgery.

We need to think more for ourselves—not just follow the crowd and at all times keep the interest of the patient himself uppermost. The human interest—the interest of the patient and not the interest of science should predominate. We should be honest with our patients, even if it hurts, treat him in the same way we ourselves would like to be treated.

I am quite aware that this is the age of the specialist in all his glory and possibly justly so. We need the trained specialist—we could not well get along without him but the spirit of specialties has so pervaded our profession that the idea prevails that a good all-round Doctor is impossible during the lifetime of one man. True enough one man can not master all the specialties and must of necessity and, at the same time, very gladly refer a great number of his cases to the specialist but we can learn enough about each specialty to be able intelligently to interpret their findings alongside our own findings. The specialist's duty should not be to make a diagnosis but simply to report his findings to the doctor for his guidance in arriving at a diagnosis. In touching briefly on some of the fads used as more or less as routine in diagnosis I will first consider the x-ray.

X-ray.—The x-ray is undoubtedly the greatest aid to diagnosis that we possess. The use of the x-ray, both in diagnosis and treatment, is proving a blessing to many every day. The only injurious thing about the x-ray is that it is making us much more inferior diagnosticians from the standpoint of physical examination. A good many of us have ceased to rely on our own ability and own opinion in the case. We have come to depend entirely on the x-ray to make the diagnosis in a certain number of cases. We are told by some that the x-ray will diagnose obscure tuberculosis lesions in the chest that could not be otherwise diagnosed. Perhaps this is true. If you have many of the clinical symptoms and some of the physical signs of pulmonary tuberculosis present and in addition the x-ray shows some affected area in the chest I believe a diagnosis of pulmonary tuberculosis is unquestionably

justified but personally I would hesitate to make a diagnosis of pulmonary tuberculosis on the x-ray findings alone. The same thing is, I believe, true of cholelithiasis, nephrolithiasis and our stomach and intestinal disorders. The x-ray is a valuable aid in the diagnosis and treatment of diseases. It is practically indispensable, but for the present I believe we should consider it as merely a diagnostic aid. It must continue to be secondary to the physical examination.

Laboratory: Next a few laboratory tests will be touched on: The Bacteriological laboratory is another diagnostic aid, with which we are blessed today: In a large number of cases the laboratory diagnosis is definite, independent and complete but I wish to mention a few tests that must be weighed carefully with the clinical findings before accepting them as proof positive of a given disease.

Chiefly I wish to mention the Wassermann reaction. This test was brought before our profession some sixteen years ago—during which period it has been accepted practically without question but today there are some skeptics and they are making investigations that shake our faith in this test. Ravaut found, after giving *known non-syphilitic* patients suffering with varied skin affections, neoarsphenamine, that in 35% he was able to produce a positive Wassermann reaction. The positive Wassermann reactions were in:

(1) Angio lupoi with papulo-neerotic Tuberculid.

(2) Lupus Erythematosus.

(3) Generalized lichen planus.

(4) Psoriasis.

(5) Lichen Planus.

Leprosy and yaws frequently give a positive reaction. The reaction occurs frequently in diabetes when there is no syphilitic clinical history. It has been noted during the febrile period of pneumonia and typhus fever, and in malaria occasionally if the blood be taken during the chill. Certainly the above findings call for care and caution in accepting the Wassermann reaction. It is a good test and has undoubtedly come to stay, but the test has its limitations and we should keep our eyes open to the fact. Syphilis is one of the most dreadful diseases known to us and we should be exceedingly careful about making a definite diagnosis of it. The stigma and humiliation is

too great for the diagnosis to be considered lightly. We cannot be too cautious. According to Strickler the status of the Wassermann is about as follows:

(1) A negative Wassermann test in the presence of definite Syphilitic lesions is a possibility in certain stages of the disease. This may occur at times in tertiary syphilis, inherited syphilis and also in certain types of neurosyphilis.

(2) A positive Wassermann test in the presence of a non-syphilitic disease should not always mean syphilis.

(3) While a strongly positive Wassermann reaction in a subject who is not suffering from any illness should cause us to investigate, nevertheless too great stress is not to be put on it unless this finding is confirmed by a number of reliable laboratories.

In other words the Wassermann test is a valuable symptom that should be impartially weighed along with the other clinical evidence in arriving at a diagnosis.

The Widal reaction: Various other blood examinations and urinalyses are also valuable diagnostic aids for which we should be very grateful but let us continue to consider them as mere adjuncts. I wish to impress that I think the taking of a careful history and a methodical painstaking physical examination is much more valuable than all these various tests. When we are consulted we should not feel that all that is necessary for us to do is to run the said patient through the "Mill" and that the machinery will grind out for us a finished diagnosis—while we sit idly by with folded hands waiting for the report. In this matter the patient as a human being is lost sight of and becomes merely an abstract thing. We should gladly welcome all the assistance the laboratories can give us in making our diagnosis but let us not accept every report we receive too complacently and without question especially if the report contradicts the physical findings.

In the treatment of our cases a note of caution is not amiss.

Surgery: In the last few years, it is an undisputed fact, that surgery has made wonderful progress but to my mind many operations are being performed today that are of doubtful value. True, an honest and skillful surgeon fills a place that is absolutely indispensable

and renders an inestimable service to mankind but at the same time much operating is being done, especially by the untrained surgeon, that is not only needless but very injurious to the patient. This is especially true in gynecological and neurasthenic cases. I have had occasion to observe several women who have been cleaned out by ambitious surgeons. Everything mostly had been removed without any apparent regard for pathology or physiology. Three of these cases, I now recall are nervous wrecks still searching for some beneficial treatment. We internists would be doing a very harmful thing—criminal in fact—to attempt a surgical ease medicinally. We should constantly be on our guard for the positively surgical class, especially the acute surgical cases and refer them to a competent well trained surgeon at once but in our chronic and subacute cases where the need for surgery is in considerable doubt we should exhaust every means of treatment before recommending surgery.

I also wish to speak briefly on endocrinology. Endocrinology is undoubtedly a subject of prime importance. By some of the skeptical it is rejected without any investigation whatever but by the majority of us I believe it is accepted too complacently with little questioning. If we do not give endocrine products for every ailment known to the human family it will not be the fault of a large number of pharmaceutical houses who are flooding our mail with all kinds of literature on the subject. Recklessly giving endocrine products to all kinds of patients without proper facilities for observation and claiming a triumph for the remedy whenever the patient becomes slightly improved, and failing to take notice of failures will get us nowhere. These things must be studied out by careful men in the clinics and we must exercise a great deal of conservatism in accepting this theory. Endocrinology is practically an unknown field; one which will some day probably revolutionize medicine but at the present is practically an unexplored field. The theory is very fascinating and for this reason many of us are likely to venture farther than we are justified by the present findings.

In the prescribing of various drugs I am sure we could further the interests of medicine by being a little more conservative. We are so likely to get into the habit of writing out a long "shot gun" prescription containing nine

or ten drugs that will not improve our patient's condition but may even do him harm by upsetting the stomach. Many of us excuse ourselves by saying that we must give something. Then if that is the case we should give some harmless placebo and give it with our eyes open and not give the prescription credit for any improvement in the patient. We should make our prescriptions more simple and try to use only remedies for which we can give a reason and good authority. Most of us use entirely too many drugs. We give our patients too much useless medicine. A drug should never be prescribed unless there is a definite indication for it.

I know that this paper seems entirely destructive, that it attacks everything and that it upholds and defends nothing; but Gentlemen, I hope that it may be constructive in that it may cause all of us to think more. Of course we must be constructive but at the same time I believe that any truly constructive work done in medicine must be approached with a great deal of care and caution. We must continue to be conservative. We must not be misled by every new fad in medicine, if we are to hold that time honored place of respect and admiration accorded us, by our fellowmen in the past.

OSTEOMYELITIS.*

J. P. BAIRD, M. D., DYERSBURG.

IN CONSIDERING the subject of Osteomyelitis it is not our intention to attempt to bring before this Society anything new in the cause, pathology, or treatment of this quite common condition, but rather to review the subject in a way if possible to cause us all fully to appreciate the necessity of its very early recognition, and its prompt and thorough treatment.

In very few infections is the destructive process so rapid, and avoidable pathology brought on by procrastination to the same extent that we see in acute osteitis. Only in the subacute and chronic forms do we see a slowing down in the process, in direct proportion to the virulence of the invading bacteria present.

Many years ago the unexcelled teaching of Jno. B. Murphy was instrumental in bringing the profession almost as a unit to the recognition of the fact that the only safe course in acute appendicitis was immediate surgical relief; and, that when extensive peritonitis and pus formation had already occurred before operation, either the patient or the attending surgeon must bear the responsibility for the unnecessary progress of the pathology.

Almost, if not with equal force could the

same statement be made to apply to the very acute cases of osteomyelitis, all the early symptoms of which cry out clearly and unmistakably for rapid and complete relief, which if long withheld causes rapid extension of infection, extensive or complete destruction of the whole bone, and sometimes the contiguous joints and adjoining bones, with an occasional death of the patient.

Briefly the cause is a pyogenic infection carried primarily by the blood stream and deposited at some point of low resistance in the periosteum, bone or medulla. Local low resistance may be due to an injury, bruise, fracture, sprain or exposure to extreme cold. (Cheyne and Burghard). The original focus of infection may be due to any infective process in the body including an abscess, boil, tonsil, pyorrhoeic gums, general pyaemic infections, and according to some writers infective disturbances of the gastro intestinal tract, typhoid, etc.

Morris, in "Surgery, Gynecology and Obstetrics," reports and gives many interesting x-ray views of osteomyelitic tibias and fibulas accompanying ulcerative varicosities of the leg, although the ulcers are not in direct contact or connected by fistulae with the pathologic bone. The staphylococci are probably the most constant bacteria present. Occasionally and apparently idiopathic, without demon-

*Read before the Tennessee State Medical Association, Memphis, April 11-13, 1922.

strable causative factor, the organisms are deposited in the bone where the normal resistance to infection is already below that of other more vascular and elastic body tissues, and a rapid destructive process begins.

The nutrient vessels, through which the life of the bone depends, being exceedingly small and passing through small bony canals preventing expansion, very naturally and easily become occluded early during the inflammatory process, which soon causes extreme pain and early death of a portion or almost the entire bone.

The extreme pain caused by the inflammatory exudate and resistance to the attempted expansion of the infected area within the bone, is not relieved until the hard external plate becomes softened, ulcerated and yields to the pressure within. However this spontaneous bone drainage and relief unfortunately does not occur until irreparable damage has occurred.

Now just what pertinent and practical symptoms appear, which we should heed at once, if we are to give the most effective service. It has been repeatedly said and is again being insisted upon that a diagnosis can be made in approximately eighty per cent of all cases by a careful and complete case history. This applies especially to the condition under discussion, for if we wait for the x-ray to show pathology we have "watched" our patient into the badly damaged class. Therefore we should recognize the extreme importance of the early case history.

Any case of extreme pain deep in the bone; no external swelling of the soft parts; gradually increasing in severity, constant in nature, not influenced by a moderate degree of sedatives; with an average rise of temperature and pulse; the whole condition progressing in character over a period of several hours, should cause us immediately to begin to make the necessary arrangements for an early bone drainage. Don't study too long about the old over-worked term "rheumatism" but get busy with a real diagnosis. It is surprising the number of patients being treated for rheumatism, while the bone is softening.

You would also think it impossible for any one to treat this condition for typhoid fever, but we unfortunately found such more than once.

Getting back to the proposed relief of a patient with the above group of symptoms present, it is well while making a few necessary arrangements for relief of this infection and extreme internal pressure to have a blood count and determine the degree of leucocytosis present, which will probably be high; and an x-ray should be made; but with the distinct understanding that no pathology should be shown at this early date if we have been wide awake in our diagnosis.

Should we hold up until bone roughness or periosteal elevation can be detected showing bone destruction already going on we have missed our duty and opportunity of preventing just such useless bone destruction. Frequently we are fortunate to see the patient early enough and establish drainage in time to prevent extensive or any necrosis at all, thereby making convalescence rapid and short; but more frequently we find the pathology much further advanced than we expected, even though we thought we were wide awake and operating comparatively early. One or two cases I'll briefly report to demonstrate this point and exhibit the x-ray findings.

First case: baby two years of age arrived in hospital July 31, 1921 with high fever (104) intense pain and slight swelling in lower portion left thigh. Child screaming and almost in convulsions in spite of frequent doses paregoric. Pain had begun only five days previously, gradually increasing. Bone involvement suspected but x-ray showed no definite roughening, periosteal elevation or sequestra formation. In spite of x-ray appearances we decided relief could come only from immediately bone drainage. Operation showed a small amount of pus was already present around the bone, periosteum slightly elevated, congested and ulcerated in spots. A narrow strip of bone one and a half inches was removed allowing free exit of dark blood and some pus. Small rubber tube introduced in medullary canal and another placed externally between bone and soft parts. Immediately relief of all pain and drop in temperature showed we had established fairly good drainage.

Apparently extensive bone destruction had not occurred and child rapidly returned to almost normal; appetite, color, general condi-

tion of patient, and local appearance of wound indicated a rapid recovery and parents as usual insisted on the earliest possible date for removal home. At the end of three weeks while there was still a slight drainage from the wound but pulse and temperature normal we allowed parents to take her home for continued treatments under family physician's care.

September 2nd, twelve days from her return home she was carried back to hospital with history of having rolled over in bed rather lively and "hurt" her leg, making it more tender and quite limber. X-ray at this time showed extreme bone necrosis and periosteal elevation throughout entire shaft of femur with complete rarefaction and fracture of middle third. Temperature 99 degrees at this time. Incision from original wound extended upward, ends of fracture exposed, a few small loose sequestra removed and small tubes inserted upward and downward in ends of fragments, Dakin's Solution started and side board splint applied to limb. The present condition impressed us with the enormous extent of bone involvement, undoubtedly caused by primary infection, engorgement and obstructed circulation, before the primary drainage was done, and yet not shown by the early radiograph.

Plate three, eight weeks from date of the spontaneous fracture shows rapid new bone formation within a large part of the periosteal tube which had been loosened and misplaced to the left of the original bone shaft, and also general obliteration of medullary canal by new bony growth.

While waiting for and expecting other large sequestra to be separated, as a slight continuous drainage persisted, we took plate No. 4 which showed almost complete reconstruction, thickening and straightening of the femur to the extent that we had no fear of patient walking unsupported by splint, which she did.

Only a small sequestrum appeared to remain on outer part of shaft and parents hesitated to have it removed as it caused little inconvenience to the child and only occasional slight serous discharge.

Several months later however and one year from the original infection, as an occasional small pus collection appeared they consented to have the small remaining splinter removed, since which time no trace of trouble can be

found. Child now well, running and walking and no shortening of femur.

The remaining or second case I'll mention more briefly simply to show again how rapidly a case may progress while we think we are watching its incipient stage.

Case two: woman thirty-five operated upon three weeks previously for acute salpingitis. Recovery rather slow, and complicated by the appearance of pains at intervals in various parts of body and in other joints before seeming to localize in head of tibia.

This fact made us slow in suspecting a bone involvement as pains were not extremely acute, therefore slight swelling, tenderness and some pitting of soft parts on pressure before we had radiograph (No. 5) taken showing very little if any variation from normal, but as indications for bone drainage, as shown by physical examination and the subjective symptoms seemed clear, we immediately opening freely into upper portion of the tibial shaft relieving the bone of much pressure, much dark blood and considerable pus.

Even with the bone under direct observation, and a free opening made which relieved pain and other symptoms we did not fully appreciate the full amount of damage done, for within the period of the next two weeks some shortening of the tibia and malposition of the shaft was apparent, causing us to have plates 6 and 7 made, showing extreme and rapid destruction of a considerable portion of the upper part of shaft and head of tibia which was rapidly collapsing and telescoping itself, causing shortening.

Immediate extension by weights, enlarging the opening in upper portion of shaft and additional opening near the ankle gave free access to the medullary pus.

Again notice in plate 8 the clear cut outlines of the whole middle and lower parts of tibia with no periosteal thickening, showing almost normal in the skiagraph, while the whole medullary canal to its lower end was full of pus.

In spite of the acuteness of the infection in this case and also the fact that the articular cartilage was perforated infecting the knee joint we were enabled by continuous drainage and Dakin's Solution treatment to save the limb and retain probably 33 1-3% of normal knee joint motion.

Plate 9, shows almost complete restoration of upper portion of tibial shaft. As to the pathology, the description and plates shown of the two above cases, fairly well show the general average destructive process in acute osteomyelitis.

The chronic forms including tubercular and mixed infections will not be discussed in this paper, already more time having been consumed than was originally intended, but before closing let me again review the practical points we've tried to emphasize, i. e., make diagnosis early from complete history and physical findings, don't wait for x-ray showings, operate early and completely, and don't be too optimistic in your prognosis.

DISCUSSION.

DR. R. W. BILLINGTON, Nashville: I think the doctor has given us an excellent paper. This is a subject which I think is frequently very badly handled for the reason stated by the essayist; that is, we are not quite sure of what the character of the trouble is, and cases are allowed to run along and we wait for an x-ray picture to be taken before we make a diagnosis of bone disease. We know that if drainage is established early extension of the infective process and destruction of bone will be limited to a small area, and the patient will be saved the danger of life and limb and a permanent deformity.

The role of the periosteum is the important thing, it seems to me, in this problem of early treatment. There is danger in waiting. The periosteum being a dense fibrous covering of the bone from one epiphysis to the other, prevents the discharge or the burrowing of pus to the surface. The pus burrows along the line of least resistance, beneath the periosteum from one end of the shaft to the other and with the cutting off of the circulation of the bone you may get destruction and death of the whole shaft of the bone. The disease starts in the metaphysis in juxtaposition to the epiphysis of the long bone; near the end of the shaft of the bone, that is, in the cancellous tissue on the diaphyseal side of the epiphyseal line. The periosteum is incised freely and quarter inch drill holes made into the center of the bone; this will relieve pressure and allow the escape of pus, thus limiting the progress and extent of the disease. This was proven to my mind most conclusively in our cases of osteomyelitis following open war wounds. I saw a great number of cases of war injuries with more or less osteomyelitis. I operated on some three hundred such cases, and I could count on the fingers of one hand the cases in which this infection extended for any distance from the point of injury. In other words, the osteomyelitis was practically

always limited to the vicinity of the wound, to the damaged tissue. Why? Because the missiles, bullet or shrapnel, had established drainage before the infection took place, consequently there was no burrowing of the pus, no extension of the infection underneath the periosteum or into the other portions of the injured bone. That is conclusive proof of what early drainage will do in these cases. Early drainage should be instituted within twenty-four hours from the onset of symptoms.

There is one symptom which the essayist did not emphasize which should be mentioned, and that is, tenderness on deep pressure over the bone. Often-times in these cases, starting near the joint, you are in doubt whether the trouble is in the joint or the diaphysis of the bone. In the latter the movements are unlimited by muscular spasm, the tenderness is localized over the shaft of the bone, although near the joint, but distal to the epiphyseal line. With these signs and the symptoms of acute sepsis, you can make a pretty definite diagnosis of osteomyelitis very early. After you have operated, after you have established drainage, no effort should be made to remove dead bone in the acute stage. You do not know how much of the bone will die. Drain and wait six or eight weeks until the x-ray shows that there is a good surrounding layer of new bone laid down, then remove the sequestra. You will have enough new bone to preserve the continuity of the shaft of the bone. You will not have a flail limb. You will require no bone graft. If you drain early enough there will probably be no sequestrum requiring later operation.

DR. THOMAS H. INGRAM, Memphis: I do not think I can add much to what the essayist and Dr. Billington have said other than that we should impress upon the general practitioner the early diagnosis of osteomyelitis. General practitioners should be impressed with the fact that following any trauma over a bone, a depressed fracture of the epiphyseal end of the bone, there should be a suspicion of osteomyelitis.

I am treating now one of the most diffuse cases of osteomyelitis in which if an early diagnosis had been made, we might have been able to save the femur. The case has been running along for several months; two operations have been done and drainage thoroughly established, but as the doctor has said, we do not know how much bone will be destroyed and to what extent the involucrum will take care of the new bone that is formed.

I have enjoyed the essayist's paper very much, and I think I would appreciate it more if he had discussed the early diagnosis. Where you are suspicious of pain over a bone I think it ought to be investigated. We should not rely so much on the early diagnosis by the x-ray as we should on the symptoms. One symptom of value in osteomyelitis is pressure along the portion of the shaft of the bone. If this is done, the pain is usually referred to the site of infection. Where you get deep tenderness, you will make no mistake by making an in-

cision, establishing free drainage, and allowing the case to run along and immobilizing the limb in a plaster cast. That is one thing we should do in the treatment of osteomyelitis. If we have a serious involvement of the shaft, we should protect the limb by a moulded cast.

DR. DEERING J. ROBERTS, Nashville: I desire to go back a good many years when I was a country practitioner. I was called to see a case that had been treated by three other physicians for articular rheumatism. I made a differential diagnosis largely upon the character of the pain, the age of the individual, and the other phenomena that belonged to such cases.

The most important and most prominent indications are to differentiate between articular rheumatism and chronic arthritis. The character of the pain, as was mentioned by the essayist, was prominent in my case. The patient's joints, if moved carefully, were not painful. The pain was located in the shaft of the bone. With arthritis, as with articular rheumatism, the movement of the joints is painful. If gentle movement of the joints was made, there was little or no pain, but any pressure made along the shaft of the bone would always cause the patient to cry out.

I hold to the axiom of David Crockett, who said, "Be sure you are right, and then go ahead." The diagnosis should be made long before the x-ray will give you any information. In those days we did

not have the advantage of the x-ray. We had to go by the clinical symptoms.

I want to emphasize what was said about the early diagnosis and to emphasize again the axiom of David Crockett, "Be sure you are right, and then go ahead."

DR. J. P. BAIRD, Dyersburg: I wish to thank the gentlemen for discussing my paper, and especially Dr. Billington for what he has said. He mentioned one point which is very important, namely, he had noticed a great many war injuries in which there was no extension of the bone destruction progressing after that time. I could have cited a few cases in which, after opening the bone very early, there was no bone destruction whatever. We got beautiful results in those cases. The earlier we got into them the better.

In the two cases I reported I expected a good deal of criticism because of a great deal of bone destruction occurred in them after the original drainage was established, and the only question in these two cases would be whether the drainage was complete enough at that time. When the first opening was made drainage seemed to be complete enough, as there was already a drop in temperature and the symptoms subsided. It showed at that time the circulation to a great part of the bone was already cut off, and the early stages of death of that bone complete and ready to form sequestra which at a later time exfoliated and were removed.

THE DIET OF THE CHILD FROM NINE TO TWENTY-FOUR MONTHS.

OLIVER HILL, M. C., KNOXVILLE.

When and what shall be the first food for the normal breast fed baby? Please remember that the following remarks concern the above mentioned class of patients and not artificially fed babies, which is another problem.

In the first place we may accept as a general statement that the food for an infant must have the three known vitamins; fat soluble A, water soluble B, and antiscorbutic vitamins. They must be present in sufficient amounts. We of course must have sufficient amounts of fats, carbohydrates and proteins, mineral matter and water to meet the child's caloric requirements, also that digestibility and palatability be assured.

Intelligent feeding requirements presuppose that the physician has clearly in mind a rudimentary knowledge of these different requirements when he undertakes to prescribe a diet for the baby.

The question comes up, when shall we start giving the child food, other than the mother's milk? We have found that it is better to start small amounts of cereal decoctions; zweibaek, toast, fruits, greens and extracts from vegetables in suitable and palatable forms at about nine months, gradually increasing until we have it on a semi-solid diet. Feeding schedules, graduated and so arranged that changes or alterations suitable to the given case can be made when indicated, serve the purpose well. In other words, it must be remembered that each child is a law unto himself and requires individual study and consideration.

We have come to the conclusion that the Western schools methods are better for the child up to one year, thereafter the methods of the East are most suited to our requirements. However, in this we have made a few alterations to conform to the environment and climatic conditions.

When the child is constipated, fruit juice may be resorted to very early; three months or younger. It is a good plan to start with one teaspoonful of cereals each day, changing this formula frequently, (rice, cream of wheat and in winter oatmeal) gradually accustoming

the child to spoon feeding, which is quite a task sometimes. When you have established a tolerance for the cereals, then start your vegetables, gradually enlarging the diet, exercising care not to overfeed. One can start this procedure much earlier if circumstances demand, that is, the child is not gaining satisfactorily at six months or is constipated, of course always keeping in mind the surroundings, season of the year, etc. I dislike to make any changes in the diet of a child during the hot months if it can be avoided.

For the past few years, cows milk has been exploited to such an extent that it has been much abused. The excess of milk causes the child to lose his desire for other food, thus robbing him of the minerals which come to him in fresh fruits, vegetables and cereals, as well as the vitamins and antiscorbutic properties which these foods possess. In other words, a pint of milk in twenty-four hours is a sufficient amount, with other foods mentioned that the child can take. We have found that children so fed, are free from the vomiting and stupor accompanied by acetoneuria, so prevalent in children who have been fed a quart of milk daily in addition to a full diet. The propaganda of giving a quart of milk daily is fallacious, and when followed, leads to symptoms attendant upon an unbalanced diet. We must remember that the protein intake for cows milk must be much greater than in mother milk in order to obtain the allotted amount of protein.

We have found that the above method of weaning the child is better than letting him depend entirely upon the breast until he is a year old, then changing suddenly. It has not upset his digestion, as the change is gradual. You find his idiosyncracies, if he has any, and can adjust his food accordingly. The mother is also less inconvenienced and disturbed by this procedure.

We have found that the following feeding schedules will give you a working basis to operate from and you can fit your feeding to the individual case of the child under consideration. Begin at about nine months. BOIL

ALL MILK THREE MINUTES. NO RAW FRUIT.

6 A. M. Nurse.

8 A. M. Orange juice, prune juice or strained prunes ($\frac{1}{2}$ to 2 tablespoonfuls).

10 A. M. Nurse.

Cereal

Farina, cream of wheat, oatmeal, rice flour, cornstarch or arrow root 6 oz. The cereal should be cooked (cream of wheat 2 hours, oatmeal and rice, for 3 hours) the day before.

1 tablespoonful cereal

$\frac{1}{2}$ cup milk

$\frac{1}{2}$ cup water

1 pinch salt

Boil for 30 minutes over the direct flame or $1\frac{1}{2}$ hours in the double boiler.

Crisp bacon ($\frac{1}{2}$ to 1 slice).

2 P. M. (A) Vegetable soup (to 8 oz.)

$\frac{1}{4}$ lb. beef, lamb, veal or chicken

1 potato

1 carrot

2 stalks celery

1 tablespoon pearl barley

2 tablespoonfuls rice

2 qts. water

1 pinch salt

Finely divide the vegetables. Add the vegetables, barley and rice to 2 qts. water. Boil down to 1 qt., cooking three hours. Add pinch salt. Pass thru fine sieve.

OR (B) Baked potato, (boil to bottom of pot, then bake) (1 teaspoonful to 4 tablespoonfuls) with beef juice. ($\frac{1}{2}$ teaspoonful to 1 tablespoonful) and strained carrot, spinach or squash (1 teaspoonful to 1 tablespoonful). If (B) is used a bottle of milk be given.

6 P. M. Nurse

(A) Cereal as 10 A. M.

OR (B) Toast or zweiback (1 to 2 slices in part of milk mixture)

10 P. M. Nurse (If required).

Buttermilk may be given at feeding times and need not be boiled.

Begin at about one year. Boil all sweet milk three minutes. No raw fruit.

7 A. M. Cornmeal, oatmeal, wheatena, hominy, rice, cream of wheat, (All cooked 4 hours the day before) served with butter, or milk and a little sugar. Drink of milk. Bread stuffs.

9 A. M. Juice of orange or any other cooked fruit juice.

11 A. M. Scraped steak mixed with bread crumbs and moistened with beef juice, cornbread and gravy, portion of soft boiled egg mixed with bread crumbs, minced chicken, baked potato, turnip, mustard or spinach greens, asparagus, carrots. Drink of milk. Bread stuffs.

Sleep after this meal.

3 P. M. Chicken, beef or mutton broth with bread or rice in it. Custard, cornstarch or junket. Bread stuffs. No milk at this meal.

6 P. M. Farina or cream of wheat, (cooked 2 hours in water) or one of the above cereals in the same way. Drink of milk. Bread stuffs.

BREAD STUFFS—

Wheatworth biscuit, zweiback, Holland rusk or well toasted bread.

TO OBTAIN SCRAPED STEAK—

Cook one-half pound of round steak very rare, split it and scrape out the pulp.

DISCUSSION.

DR. ROSAMOND: In regard to Dr. Hill's paper, I want to say that the age of feeding depends on the individual development, but I like Dr. Hill, feed babies on solid food a little later than six months. I think one of the best plans is to begin at the eighth or ninth month, according to the baby's development, and according to the number of teeth the baby has out, and omit one breast feeding and add simply a dilution of cow's milk, starting with half and half. If the baby is weak and poorly nourished, is a subnormal baby, start with skimmed or whole milk, and rapidly increase this. By the time we get the baby on whole milk, make two feedings a day, and add feeding of cream of wheat. The next thing I do, after soft cereal feeding, is to prescribe a vegetable broth, not a meat flavored broth. Take a piece of mutton or chicken, to which is added green vegetables, such as carrots, turnips, etc. I know the grandmother of the child would

turn over in her grave if we recommended feeding turnips to an eight or nine months old baby. Turnips are more digestible than other things we might give a baby. Turnip tops, cereals, anything green, is indicated, giving the baby for a few days a vegetable broth, then directing the mother to take cooked green vegetables, mashing them through a strainer and thickening the vegetable broth with vegetable puree. That gets the baby started up the hill, so that then we may add stewed fruits and other things.

DR. J. J. HOBSON, Memphis: In regard to Dr. Hill's paper, I am reminded of some of the points that were brought out in the paper of Dr. Harris on enteroptosis and gastropstosis. I think the average practitioner is not paying enough attention to the feeding of children, not only during the first year but after the first year of life. Dr. Harris made the statement in his paper—and I do not doubt but what he has the best authority for making it—that the great percentage of cases of gastropstosis and enteroptosis are caused by improper feeding during childhood. In view of the fact, so

I would urge that the average practitioner, who is not especially interested in children's diseases, pay more attention to what he tells the mother to feed the child. He can get any textbook on pediatrics and consult it with reference to infant feeding, and in ten minutes he can copy formula or good dietary that will suit the infant. Dr. Hill's plan is excellent. If more attention were paid to infant feeding from the sixth month to the sixteenth month of the second year, there would be fewer pediatricians. A good many of us would have to go to other fields to make a living.

DR. OLIVER HILL, Knoxville, (closing on his part); I have nothing further to add except that in preparing these papers we have attempted to standardize the material and we have very largely. The majority of practitioners have not the time nor the inclination to do this, and in my paper I made a plea for better pediatrics in Tennessee, so that we can come to some definite understanding, not by rule of thumb, but we can make flexible rules that we can have some standardization.

CASE REPORT: SYPHILITIC CERVICAL PACHYMENINGITIS.*

BY R. C. BUNTING, M. D., MEMPHIS.

THE patient, a boxer by profession, a man of twenty-five, first came under my observation the early part of February. The chief and only complaint being pains in the occipital and nuchal regions, shoulders and both arms and hands; this condition having been present constantly for some twenty months.

Family History: His father is living, and well, age forty-eight. His mother is living and has good health. One brother is living age twenty-six, health good; none dead. No sisters living, some having died in infancy; the cause not being known. No history of cancer, tuberculosis, insanity or nervous diseases obtainable.

Past History: He had the usual diseases of childhood. There was no other illness of any moment between childhood and beginning of the present trouble except smallpox about the age of seven or eight.

Genito-Urinary History: Neisserian infection about the age of twenty; a leptic infection at twenty or twenty-one years of age.

Present Illness: This dates from about March, 1920, appearing one or two days after the patient had been on a spree from too free use of bay rum. He engaged in a boxing match on the night following the spree but sustained no injury. The spree lasted approximately twenty-four hours and the patient then noticed that he had some elevation of temperature. Directly following the drinking he ran an elevated temperature for some few days. At this time his trouble was diagnosed as tuberculosis, heart trouble and nervous breakdown. He then had a tonsillectomy performed and in about five weeks the present pains appeared in the occipital region, both shoulders and arms. The pain then, as now, is described as constant, steady and tearing in character. Use of the arm and shoulders did not seem to aggravate or intensify the pain. There seems to be no portion of the arm that is spared, the patient saying it is

in the entire arm. The fingers, particularly the distal portions, he says, feel numb, this applying to the little finger as well as the thumb. It seems that a week or ten days following the drinking of the bay rum he was in a hospital and unconscious for some five weeks, but no diagnosis was given him as to the trouble he had been through. His blood was examined in Salt Lake City, in the spring of 1920, and found to be syphilitic and he received some intravenous treatments there. He was treated in Los Angeles, Little Rock and Hot Springs for syphilis. He came to Memphis in June or July, 1921 and about this time his blood was examined and reported normal. From there he entered the Memphis General Hospital seeking relief, and examinations of blood and spinal fluid were reported as normal. Complete examination, including the x-rays, at the general hospital, disclosed what was thought to be rudimentary cervical ribs and he was operated upon, on or about September, 1921 for the removal of the left rib, with no relief. Following the operation he received six intravenous injections of salvarsan with, apparently, no betterment of condition. Shortly after he entered the Baptist Hospital where, as far as can be learned, nothing of any moment was done. In November 1921, he was placed in an extension apparatus for a short while but not being able to stand the treatment this was abandoned.

Present Physical Status: The patient is about twenty-five years of age; height, five feet nine and one-half inches; weight, about one hundred thirty-five pounds; and is fairly well nourished. He complains of constant tearing pain. The pain thus confined to the occipital region with occasional shooting pains in the nap of the neck and pains in both shoulders and arms; and paresthesia of all fingers of both hands. He walks with the head and neck and shoulders fixed, the arms slightly abducted and back and shoulders carried rather rigidly. His gait shows nothing abnormal and his station when his eyes are open and closed, good. His expression is rather of the immobilized type. The eye slits

*Read before the meeting of the West Tennessee Medical and Surgical Association at Jackson, Tenn., May 16, 17, 1922.

appear a little wider than normal and the eyeballs perhaps a trifle prominent. The eyeballs move in all directions, equally.

There is no Von Graefe. There is no Dalmryple. The pupils are unequal, the left being larger than the right, but they are regular in outline and react nicely to direct, the consensual light reflex and contract during accommodation. The facial muscles on the left side have a flatter appearance than those of the right, this applying to the middle as well as the lower muscles of the face. The right lower facial muscles show fibrillary twitchings. The teeth are evenly displayed when smiling. The throat is not red and there is no paralysis of muscles of the throat. The tonsils have been removed. The tongue is protruded in the median line and the right, anterior, half shows some atrophy, and there is fibrillary twitchings on both sides, more on the right. The teeth are in fair shape. There is some pyrohea. The thyroid isthmus is not felt but the lateral lobes are easily made out though there appears to be no marked enlargement. There is some limitation of the movement of the shoulder of the left side particularly in the upward movement of the shoulder girdle. (The patient states this has come since his operation). There seems to be no limitation of the right shoulder though he says his arm is weaker than before the operation. The left arm, as a whole, appears somewhat smaller than its fellow and is carried slightly abducted and flexed and he apparently immobilizes same. The right arm is carried somewhat similarly though to a less degree. There is no wasting of the muscles of the hands and there is no tremor. Examination of superficial sensation of arms and hands shows nothing abnormal though he complains of a numbness of the distal part of the fingers. The fingers to nose test is performed nicely on both sides. There is no adiadokokinesia and no astereognosis. The lungs are normal. The heart is negative. The liver and spleen are not palpable. There is no tenderness anywhere in the abdominal region; and no masses are made out. The abdominal reflexes are present but very hard to discern. The genitalia appear normal.

The lower limbs appear normal on inspection. The knee jerks are present on the two sides and are weak. The ankle jerks are

the same. There is a negative Oppenheim and Babinski. The muscle strength seems good. Inspection of the back shows a triangular scar of about three inches in length by one and one-half inches in breadth, at about the middle of the left Trapezius muscle. The patient states this is the remains of the operation done for the removal of the left cervical rib. The spinal column is straight and appears normal. However, patient complains of pain when pressure is applied over the cervical and eighth dorsal spines.

At this time, about February first, the patient was sent to hospital for intraspinal treatment of salvarsanized serum. He received six injections at intervals of one week and during this time he developed retention of urine (Paralysis of detrusor mechanism and also paralysis of the rectum). He says that his pain is not any less than when first seen by me and since intraspinal treatment has been instituted. Re-examination done the week of April third, disclosed the previous physical status with exception of the following: The left facial muscle appears more paretic and is confined to the entire musculature of the left face. The tongue shows less atrophy and the fibrillary tremors are not so marked. The left biceps reflex is more active than the right. The knee jerks are quicker than when first examined and appear to be exaggerated; the right at times appear more exaggerated than the left. The ankle jerks are exaggerated and there is a definite ankle clonus obtained from both sides. There is paralysis of the rectal sphincter with consequent loss of control over his bowel movements. There is fair control of micturition though control is not absolute. The fibrillary twitchings seen in the Trapezius and Latissimi muscles are not nearly as marked as some two months previously. He states that his pains in the occipital region, neck, shoulder and arms are about as bad as when he was first examined by me. His gait appears a trifle bit stiff and he has not the free swing of his legs as when first seen.

Laboratory Examination: Urine: Amber, cloudy, Sp.g. 1.024; sugar, negative; albumin slight trace. Indican, two plus. Casts, not found; few motile bacilli are seen. W. B. C. 9000, R. B. C. 4,000,000. Hgb. 85%.

Differential Blood Count: P., 78; S., 13; L., 7; Eos., 2. Parasites not found.

Clinical Summary: The patient complains of pains in the occipital region, neck, shoulders and arms and hands. The left pupil is larger than the right. There is left facial paresis. There is fibrillary twitching of the lower part of the right face. The tongue shows fibrillary twitchings and some atrophy on right side. The head is held stiffly; also, the shoulders and arms, left more than right.

The abdominal reflexes are diminished.

There is a partial loss of vesical sphincter control. There is complete loss of sphincter control. The knee jerks are plus with clonus, and somewhat spastic gait.

Differential Diagnosis: Vertebral Caries. Cervical Rib.

Syringomyelia.

Cervical Pachymeningitis Hypertrophie.

The probable diagnosis: First, (when first seen) Cervical Pachymeningitis Hypertrophie.

Second: Cervical Pachymeningitis Hypertrophic with Myelitis of syphilitic nature.

CANCER OF LIP.*

By C. M. HAMILTON, M. D., NASHVILLE.

THE accessibility of cancer of the lip and the ease with which it is recognized should indicate a favorable prognosis, but in spite of this fact there are few malignant tumors that cause more concern. The majority of lip cancers are squamous cell epitheliomas. sarcoma is extremely rare. Squamous epithelioma of the lip is a common occurrence, constituting 537 cases of 2,000 general epitheliomas reported at the Mayo Clinic.

The exact cause of epithelioma is not definitely understood, but it is generally accepted that constant irritation is an important factor in its development. Pfahler states that every sore, ulcer, fissure or nodule which remains on the lip for four weeks, excluding syphilis, is potentially a cancer. Broders of the Mayo Clinic found that 71% of their cases occurred at the site of a previous ulcer, fissure or leukoplakia. It may be that the sunrays play an important role in their production. In about 96% of the cases the lesion is on the lower lip and about $\frac{3}{4}$ of these occur in farmers and other laboring people, who lead an outdoor life. From 537 cases reported by Broders, there were only eleven in women, who generally lead an indoor life. Other sources of irritation are sharp jagged teeth, pyorrheal infection, seborrheal keratosis and pipe-smoking. Pipe smoking may help to increase the percentage of male patients,

but there are more men, who do not smoke, with cancer on the lip than all the cases occurring in women.

In order scientifically to cope with cancer of the lip an accurate knowledge of its nature is necessary. Basal cell epithelioma of the lip is rare, having been reported in only four of Bloodgood's series of 104 cases. It predominates in upper lip and cutaneous epitheliomas and when it is located on the lower lip it is thought to be an extension from a cutaneous involvement. It presents itself as a superficial waxy nodule marked with a network of fine radiating blood vessels. Its growth is usually slow and it seldom metastasizes. After a few months the central portion degenerates, leaving what is frequently spoken of as rodent ulcer.

Practically every malignant growth originating on the mucous surface of the lower lip is squamous cell epithelioma. It is divided into two distinct types; papillary, and deep infiltrating. The papillary type is a superficial warty exerescence of epithelial tissue apparently piled upon the surface of the lip. It may be so large as to cover the greater portion of the lip, but no infiltration is found at its base. Metastasis seldom takes place. Bloodgood reports 16 cures from 17 local removals and attributes his only recurrence to insufficient excision. Eight of his patients had gland dissection, but no involvement was demonstrated.

*Read before the Middle Tennessee Medical Association at Franklin, May 11, 12, 1922.

The infiltrating squamous cell epithelioma is one of the most virulent of all neoplasms and occurs more frequently on the lower lip than in any other region. Its growth is rapid and it metastasizes early. In appearance it is a small ulcer with irregular elevated edges and is surrounded by a zone of discolored indurated tissue. It seems to be set into a large globular invading mass. The ulcer is relatively small and represents the tip of a cone of malignant tissue.

Infiltrating squamous epitheliomas have been said to metastasize as early as one month. Broders reports regional glands removed in 449 cases. Glandular involvement was discovered in 23%. Of these the sub-maxillary nodes showed metastasis in 87.6%; sub-mental and cervical each in 24.7%; and sub-maxillary salivary gland in 21.9%. These regions and their relative frequency of involvement should be borne in mind on every examination. The sub-maxillary region should receive very careful consideration. Most observers disapprove of useless manipulation and biopsy. With the majority of cases a clinical diagnosis is sufficient. When in doubt a biopsy should be done only after a thorough radiation. There are three factors favoring early metastasis. (1). It is the nature of this type of tumor to metastasize early. (2). The lip is a flexible organ, subject to muscular action and traumatic influences that aid metastasis. (3). The lip is richly supplied with lymphatics. The sub-mucous lymphatics do not anastomose enabling indurating lesions to metastasize to either side.

The treatment of cancerous processes of the lip requires skill and judgment regardless of the measure employed. Every case is a law unto itself and a rational procedure can only be established after careful consideration of its size, position, nature of the growth, and period of involvement. Many methods of dealing with malignancy of the lip have been employed, but the lack of uniformity of opinion emphasizes the difficulty usually encountered. Some of the more radical surgeons still adhere to the old orthodox rule of doing a "V" shaped excision of the primary lesion and a bilateral neck dissection of the glands in every case. Other surgeons excise the tumor and treat the glands conservatively.

Pfahler uses electro-coagulation to destroy

the primary growth and radiates its base by X-ray or radium. The glandular regions are radiated in every instance and if palpable nodes are detected, they are subjected to intense radium needle therapy in addition. He refers his advanced cases to surgery, but advises pre-operative and post-operative radiation. He claims to have obtained some remarkable results.

Quick of the Memorial Hospital, New York City, employs radium exclusively for the local involvement and a thorough radiation of the regional lymph nodes. If invasion has taken place he does a regional dissection and places radium in the bottom of the wound for such a time as will be necessary to destroy any small nodes or cells that may be overlooked. If invasion has extended through the gland capsule into the structures of the neck he distributes radium evenly and uniformly throughout the mass. After the cases without palpable glands have been radiated, they are urged to return at different intervals for further radiation and observation, being careful to emphasize the gravity of their condition. He has traced 92 cases without recognizable gland involvement at the initial examination. Only nine of this number developed metastatic glands subsequently and eight of these are clinically cured following dissection and radiation.

Grier of Pittsburgh advocates massive unfiltered X-ray radiation locally and intense filter radiation of the lymph drainage regions. In his report of 23 cases he claims to have had 19 cures, 2 failures, and 2 recurrences which were referred for surgery.

Surgery in good hands relieves about 70% of the cases. The Mayo Clinic report shows good results in 59% of all cases and 76% in patients without metastasis. Any measure which gives a patient such a good chance for recovery should not be discarded until better methods can be established. However, the routine practice of doing the "V" shaped excision of the lip and bilateral dissection of the neck in every case should be condemned. The basal cell and papillary epitheliomas readily lend themselves to any destructive measure that may be instituted. Simple excision, cautery, electro-coagulation, or local radiation will suffice. Early metastasis never occurs and dissection of glands is absolutely un-

necessary. There is no invasion at the base of these tumors and a "V" shaped excision is not indicated. The deep infiltrating squamous carcinoma is a small ulcer with a broad invading base, which is entirely unsuitable for the "V" shaped excision. These lesions are more adapted to the use of local radiation by either x-ray or radium, with additional radiation by radium needles evenly placed throughout the indurated base of the tumor. Quick's expectant plan of dealing with the glands seems very feasible. Should there be no involvement their removal is useless. If they are involved and are too small to palpate, little harm can be done by radiation and waiting for enlargement. It is Quick's opinion that cancer cells do not invade the capsule of the nodes before they have grown sufficiently to be recognized. To substantiate the theory that metastasis is embolic, Beckman of the Mayo Clinic says he never saw metastasis in the lymphatic vessels. Most of the metastatic cells lodge in the regional glands and it does not seem wise to remove nature's greatest barrier against dissemination. Crile's report of less than 1% metastasis distal to the glands of the neck in 4,500 epitheliomas of the head and neck gives value to this important function of regional glands. Most observers consider metastasis into an area, where complete adenectomy has been performed, the most violent of all metastases.

Surgery alone for the glandular involvement has met with indifferent success. Operative measures are apparently inadequate. The Mayo Clinic reports show that every case has been fatal whenever there was involvement of the cervical nodes, or nodes in any other two regions. If surgery has such a limited range, it behooves us either to employ

other remedial agents, or to employ additional agents, properly combined. Every tumor that has been incompletely removed, or incompletely destroyed by cautery, radiation, or so called "Cancer" paste is more resistant to treatment than the original growth. Any measure that will destroy the cancer cells is sufficient. Radiation probably causes less inconvenience to the patient and as little scar formation as any other procedure. Radium needle therapy in the base of an indurated nodule is the most satisfactory plan of radiation. There is no objection to excision, cauterization, or electro-coagulation, but each of these should be supplemented by radiation. Radiation is probably the most complete method of treatment, since none of the cells are left untreated. The glandular regions should have intensive radiation. If invasion is discovered they can be removed after radiation and radium placed in the wound. On the other hand they may be treated by both external radiation and by the insertion of radium needles. It is doubtful if metastatic squamous cell carcinomas can be permanently arrested by external radiation given in harmless dosage.

In conclusion; the following points should be emphasized: (1). The desirability of an early and complete destruction of the initial process. (2). The importance of a careful examination of the lymph nodes and the necessity of repeated examinations at definite intervals. (3). The inconsistency of gland dissection as a preventive measure. If metastasis takes place early by embolism, as is contended by most observers, not only will adenectomy fail to prevent its occurrence, but the removal of the glands will destroy the patient's greatest barrier against dissemination of the disease.

"FURTHER STUDIES IN THE USE OF RADIUM IN CANCER.*

WILLIAM SAILER ANDERSON, MEMPHIS.

IT IS most alarming when we consider the cold facts in the case—that one out of every 10 people who die after having reached the age of 40, die with cancer.

During the two years of the World's War about 80,000 soldiers and sailors were killed in action or died from the effects of wounds or disease, while during the same period 180,000 died from the ravages of cancer.

During the past year there were 1080 deaths from this dreaded disease in Tennessee and 90,000 in the United States.

The laity have the impression that cancer is *inherited*, is a *blood disease*, or it is contagious. *It is none of these.*

What is a Cancer?

It has been described by MacCarty as an attempted hyperplasia of germ cells.

It may be *infectious*, but this is as yet unproven. Still there are a number of well established factors that contribute to its development.

The most frequent *sites* of cancer are in organs most subjected to frequent or continued irritation.

Cancer development also has a predilection for acid mediums as the mouth, which has become infected by the saliva being rendered acid, the stomach, the large intestines and the cervix.

29% of malignancies occur in the uterus. The nullipara is largely exempt, and when malignancy does develop it is seldom before the 35th year.

When a woman has reached middle life, she should take notice of any profuse or irregular bleeding, as after menopause any bleeding usually means cancer. This calls for a careful examination, both by inspection and palpation. If the cervix is not at fault, then look to the fundus. If the uterus is large and somewhat boggy and bleeding is produced by bimanual examination, it is most likely a malignant growth in the fundus.

View with great suspicion a watery vaginal discharge. Fortunately cancer of the body

of the uterus usually offers most satisfying results to surgical treatment.

In the cervical type of cancer two-thirds occur at the junction of vaginal and cervical mucosa and one-third in the cervical canal.

We owe it as a duty not only to ourselves but to all our women patients to advise with them and instruct them with regards to the symptoms of an early cancer. It has well been said, "If it were possible to have every woman under competent medical supervision during the menopause, many lives would be saved by discovering the existence of early cancer, and the institution of radical treatment.

Women who have borne children are more liable to cancer than those who have not. Why? Lacerations of the cervix and perineum, faulty positions assumed by the uterus and infections. We must therefore as physicians be always on the alert and do our full duty by our patients and advise them to have such conditions corrected.

The greatest advancement in the treatment of these malignancies in the past few years has been from the use of radio-active substances.

The most efficient means of treating all malignant growths today is by the combined efforts of surgery, radium and x-rays.

The unsatisfactory results from surgery in carcinoma of the cervix are well known. The high mortality from the radical operation, as the Wertheim, soon brought it into disfavor. So with the discovery of the remarkable effects of radium in the treatment of this disease, it was eagerly adopted by the profession with a hope of being able to offer a prolongation of life and freedom from suffering to a great number of cases who formerly would have been considered hopeless. Each succeeding year radium is being used more and more and by a larger number of surgeons.

So the questions arise in my mind as well as in yours—

1st. Whether radium should be limited in its use to the inoperable cases, and after surgery has been tried and failed.

*Presented at the annual meeting of the Tennessee Medical Association, Memphis, April 11-13, 1922.

2nd. Whether it should be used as an adjunct to surgery, preropative and postoperative.

3rd. Whether it should be the only agent used.

In *inoperable carcinoma* radium treatment is accepted today as the treatment of choice. The results are more satisfactory than with any other known agent, and they are accomplished without any great risk and are often marvelous.

Few surgeons of today will attempt to remove a uterus when there is known metastasis in the pelvis. Radium and x-ray will destroy diseased tissue that the knife cannot reach, without the added danger of further implantation of the growth.

In recurrences although less effective than in primary lesions, it produces far better results than any type of operation but as a whole the results are not satisfactory.

The uterus acts as a natural filter for the rays of radium and will filter doses without any appreciable harm to itself, but when it has been removed there is left only a thin vaginal wall and peritoneum to protect the adjacent organs.

Often the vagina is much contracted after a panhysterectomy and it is often very difficult to pack the bladder and rectum out of the way of danger.

Preoperative radiation is of value but it should be followed by an early operation, for if radiation should be repeated and then operation resorted to later, say two or three months, it renders the surgical treatment far more difficult by reason of the resulting fibrous tissue.

If this procedure is adopted, I advise pre-radiation and deep x-ray treatment. It is my firm conviction that all operative cases should be pre-radiated, for thereby the activity of the cancer cells is minimized, and there is far less danger of a transplant.

In answer to the third question, as to whether radium should be the method of choice in the early operative types, there is as yet, no uniformity of opinion. The problem still confronts us, whether we are justifiable in resorting to the application of radium alone, in the cases that are operable, where an ultimate cure by surgery is reasonably certain.

The question now hangs in the balance—It is at a critical stage and will eventually be

decided, one way or the other, by those who have the courage of their convictions to report the results obtained by treatment alone, cases that would formerly have been subjected to surgery, so the testimony of each one who is seeing and treating these cases, has an immense amount of value. During the past few years I have employed radium alone, in a number of early cases, surgery having been contraindicated by complicating disease. The results have been highly satisfactory, and so far the most extensive operation could not have been more successful.

Some of you have an opinion, gathered from an extensive surgical experience, that cancer of the cervix is strictly surgical, while others may take the opposite view, and think that it is to be treated by radium alone. Let us all be open minded and use the method or methods which offer the best results in different cases. In the language of Lewellys F. Barker, of Baltimore, whose opinion is valued very highly by us all, in a recent article, he makes the following statement: "In the management of patients and in the treatment of their diseases it is our duty as physicians to see to it, that we do not neglect to make application of any of the agents at our disposal that may reasonably be expected to help."

If radium is applied in the early cases confined entirely to the cervix before metastasis has taken place; a cure may reasonably be expected in a large percentage of the cases, but if the disease has spread to the lymph glands, then only palliation can be expected, unless the x-rays are effective.

Some of you may differ with me in my practice of not taking a section from the cervix for diagnostic purposes. It is my opinion that a great amount of harm can result from this trauma to the part, so I rely on purely a clinical diagnosis.

These cases should be handled with the least amount of trauma, for trauma opens up the way for absorption of the cancer cells into the lymphatics and blood stream.

Working on this principle no effort is made to introduce the radium into the cervical canal, if any amount of trauma would result. It is to my mind a very important point. There are three very important factors favoring metastasis, the lymphatics, the blood stream, and the movements of the parts. All of these must

be considered when taken advantage of in our treatment of this disease.

Seldom do we see a case that does not show some improvement for radio-therapy is the greatest palliative agent for hemorrhage, pain, and the foul discharges, which we have at our command.

Some of these unfortunate women show most miraculous improvement and have been relieved to such an extent, and built up in health, that they are comfortable and able to assume their household duties.

Of course in these far advanced cases they are relieved of their local symptoms and a great weight is lifted from their minds; if they succumb to the metastasis, that is not so dreaded in their minds for the foul local symptoms have often been relieved.

It is my good fortune to have a number of these inoperable cases now free from all symptoms of this disease, ranging over a period of from eighteen to twenty-four months.

The details of the technique used will be omitted except to state that it is my practice to use 50 Mgr. giving on an average of thirty-

five hundred Mgr. hours for a course of treatment to be followed by deep x-ray treatment, through various portals of entry. These are begun as soon as any action from the radium has subsided. Success largely depends upon a lethal dose to the cancerous cells in the first course of treatment, for the cells develop an immunity to the rays—become radium and x-ray fast, this is why in recurrences the results are not often so encouraging.

My patients are instructed to report for routine examination at least every 60 days, for by this means, you get the cooperation of your patient and if subsequent treatment is needed it can then be given. In conclusion we have more to look forward to in the treatment of carcinoma of the cervix by radium than has ever been accomplished by any former method of treatment.

The earlier the cases present themselves for treatment the greater the possibility of permanent cure.

Only when the growth is small and limited to the cervical canal, do I consider it a surgical case.

HEMATOCOLPOS COMPLICATED WITH OVARIAN CYST AND APPENDICITIS.*

WILLIAM D. SUMPTER, M. D. NASHVILLE.

ATRESIA of the vaginal outlet produces obstruction at the hymen, vagina or cervix and may cause retention of fluid in the vagina, uterus and tubes, such collections being designated as hydro, hemato or pyocolpos, metra or salpinx respectively as the fluid is mucus blood or pus. The mucus content may be found even in very young children; the blood occurs at puberty; the purulent in the infected retained secretions. The condition may be congenital from failure of Muller's ducts to complete the vaginal outlet, in some instances a fibrous cord representing the absent vagina and only rudimentary uterus and appendage being present. The acquired deformity arises from injuries to the vagina, especially traumatic sloughing after labor, from infections, such as in typ-

hus, scarlet fever, small pox and cholera, also cancerous involvement.

While atresia may occur in the hymen, vaginal canal or cervix it is most frequently observed in the lower third of the vagina at the hymen or just above it. It may be found at more than one location in the same subject, and congenital and acquired varieties may be synchronous with distinctly different contents.

The hymen and vagina become thickened and hypertrophy of the uterus and appendages is produced. If the tumor is low (as in imperforate hymen) it may distend the vulvar orifice and perineum; may protrude with distressing pressure on the rectum and bladder. The urethra may be dilated to a degree that it may be mistaken for the vagina, even serving for sexual intercourse in one recorded case—The cervix and uterus are not dilated until late in ordinary vaginal distention; but may be in prolonged cases, distend-

*Read before the Tennessee State Medical Association, Memphis, April 11-13, 1922.

ed to obliteration of the cervical canal. The tubes may be filled by reflux or by hemorrhage within themselves the fimbriated extremities, being most dilated—The contents of mucus or pus have the same usual appearance as under other conditions. If blood is the contents, as usually it is, with the mucus admixture, it is dark or almost black in color, tarry in consistence and usually sterile.

The size of the sack may be considerable and may also extend upward as high as the umbilicus and pronounced to a degree simulating pregnancy; the uterus being felt on its summit, suggestive of a fibroid nodule.

While the foregoing pathology constitutes most cases, other anomalies should be kept in mind; a separate vagina and uterus may give normal menstruation on one side, and atresia and tumor be present on the other, mucus retentions before puberty, and blood after puberty may produce pressure on the bladder or rectum with visible bulging, and symptoms of discomfort; but, as a rule absent if tumor is high up. However, even after the menstrual molimen, which usually is indicated by pains in the back and pelvis, probably with colicky fullness of the abdomen and vomiting and nausea, the pain, which is often continuous, may be so slight that the condition is not discovered until after marriage.

Amenorrhea is often overlooked though vicarious menstruation by the nose, lungs, bladder or rectum may exist.

Beyond the evidence of amenorrhea, a condition usually accepted as a physiological derangement without physical examination being made, often the condition under discussion, is not suspected until symptoms of distress are brought to our attention, and it would be well to look with suspicion on all delayed establishment of menstruation at puberty, and advise ocular and rectal examination of the vaginal outlet as a safer procedure than the medication and hygiene of prevalent routine practice. The infrequency of atresia does not justify neglect, from maiden sentimentality, of a possible condition, that has contributed quite a per cent to our general mortality statistics, because it was recognized too late. The diagnosis is easily determined as to atresia or tumor, but involvement of the tubes is often quite difficult or impossible if the mass is of large di-

mensions. In view of the seriousness of hematesalpinx as a complication, as evidenced by "Field's statistics of 65 cases collected from all sources, 48 died from rupture and 17 were saved by operation, some surgeons advise abdominal section as necessary for proper diagnosis in obscure cases."

The presence of pelvic abscess, hematocele or tumors should not confuse the careful examiner, but may be kept in mind.

The imperforate, thick, almost cartilaginous toughness of the hymen, to which may be added the many cases of partially absent vagina makes spontaneous rupture very rare and the condition left to itself is of grave consequence practically always fatal. Surgical intervention, with its serious elements of danger, is least in gravity in those cases without tubal involvement. In all instances a guarded prognosis is sound judgement. The case is distinctly surgical and if we can be sure the tubes are normal, drainage by incision of the hymen or more radical vaginal dissection, may with reasonable safety be the operation of choice. However, vascular adhesions to the uterus have been torn by such procedure with fatal results and hematesalpinx, undetected, may be ruptured. Abdominal section consequently is to be seriously considered as a definite protection.

Careful hospital service, with strictest asepsis in operation, is of great importance as the danger of infection and peritonitis is of consequence in these cases.

Retentions due to cervical atresia may be relieved by opening the canal by sound, forceps or scissors. Those, due to partially absent vagina, require well studied dissection between bladder and rectum, drainage, insertion of gauze or glass tube or infolding and suture of mucous membrane of the labia, section of intestine or rectum to construct a vaginal cavity. Indications for hysterectomy or removal of appendages, the construction of a vaginae canal when entirely absent and no tumor is present, as a means to promote health and development of the pelvic organs, or for marital conditions may be kept in mind as a subject for consideration.

On Aug. 17, 1920, Miss E. S., white, age 14 was referred to me by Dr. W. M. Tanksley for immediate operation for acute appendicitis, diagnosis having been made by the usual symptoms corroborated by a blood count of 14400.

Previous history of general diseases was negative, tonsillectomy some weeks before had been followed by much improvement in mentality and gain of twenty pounds in weight.

She had never menstruated but during the past three or four months had had some pain in the back for a day or so, once a month with no pelvic discomfort. Bowels had always been regular; never had had pain in rectum, bladder or abdomen before the present attack of appendicitis; no headache even experienced.

While appendicitis was clearly defined the fat abdominal wall was rather rigid, but no special protrusion noted. Rectal examination, which is of great importance in all abdominal disturbances in the female, was not made, an omission a surgeon should not allow.

By a right rectus incision the abdomen was opened, through which by intra-abdominal pressure of cyst of the right ovary protruded with a diseased tube, removal of both being indicated. A gangrenous appendix was excised. The fundus of the uterus lay just beneath the umbilicus, surmounting a rigid tumor, which so completely filled the pelvis, that intra-abdominal examination of same was impossible. Inspection of the vulva revealed absence of any orifice, closure being complete by an imperforate non-bulging, but slightly receding hymen. With a finger in the rectum as a guide, the blades of a slender pair of artery forceps were pushed into the tumor, keeping the forceps parallel with the finger in the rectum, and close to it, that the bladder might not be injured. The tough and thick hymen was dilated in all directions and afforded a patulous orifice, no suture being necessary to control hemorrhage.

The thick, almost black, fluid contents of the sac of retained menstruation was more than 16 ounces. Through the newly made vaginal outlet examination of the cervix revealed a trumpet-shaped cervix, the canal of which was dilated to complete obliteration and the finger reached the inner surface of the fundus of the uterus.

The left appendages were normal. No irrigation was used, a rubber drainage tube and strip of packing were introduced into the patent uterine cavity, the gauze being partly removed on the second day, the remainder and the tube on the 4th day, and

sterile saline douches employed daily. The moist bichloride pads over the vulva were frequently renewed on soiling.

The patient made an uneventful recovery, the vagina has remained patulous, and menstruation has been normal and regular since operation.

DISCUSSION.

Dr. L. H. FANCHER, Chattanooga.—The paper of the essayist was interesting for the simple reason that there are not many cases on record such as he reports. It is true, we find a great many malformations of the genital tract. We can readily see the reason for malformations of the genital tract when we study the embryological formation in utero, the central portion fusing together, making the uterus and lower portion of the vagina. Then we think of the genital tract, the urinary tract, and alimentary tract, all originally opening into one common opening, the cloaca, we can understand why there might be not only an arrest of development and malformations, but inflammatory processes in the lower part of every one of these tracts, more often in the genital tract than the urinary or alimentary tract, which we must conclude is due to an arrest of development or fusion or a lack of partitions in these two Mullerian ducts, and is really a malformation, and one not due to inflammatory conditions. A double vagina, double uterus, bicornuate uterus, partitions in the vagina, one open hymen, and another one closed, are occasionally encountered, the true type of what used to be called imperforate hymen, and I was glad to hear Dr. Sumpter differentiate a little there, because, from what he says, this was not really an imperforate hymen but an occlusion of the lower end of the vagina independent of the hymen. I came in contact with one case of this kind in my early practice in the mountains. The patient was a girl 17 years of age, whose mother told me she had a protrusion at the inner border of the vulva. When I reached the home I found a protrusion or bulging at the vulva. Having formerly studied the embryology of these conditions I recognized it as a so-called imperforate hymen, and I simply opened it up and drained. My patient did not do well; she became infected. The vagina wanted to stay open; the uterus stayed open, the walls would not fall together, and four years after that this girl was not in good condition. She was living but was not able to work. I lost track of her.

Another case I had under my care came to me with bulging at the hymen. I opened it up, and that child now is thirteen years of age. She was brought to me at the age of three. When she was twelve years of age, if one examined her, he could not tell she had ever had an imperfect hymen. It is fortunate if we can get these cases early before there are tissue changes and thickening. If permanent changes have taken place they can not ever become normal again.

The essayist is right when he says that if you find a malformation in one part of the genital tract, you

are liable to find it in another. He opened the abdomen first. If that patient had come to me with an imperforate hymen or with closed vaginal tract, I do not think I would have entered the abdomen, and would not have found the condition of the tube and ovary. I congratulate him on opening the abdomen first.

DR. L. A. YARBROUGH, Covington.—The case reported by Dr. Sumpter undoubtedly looks like a case of abdominal pregnancy. The condition is very rare in our section of the country. I remember one case that came under my observation about fifteen years ago. She had never menstruated; she began taking all kinds of patent medicines, and among them wine of Cardui. She took anything she could get hold of in order to get relief. She had nose bleeding about every twenty-eight days. I operated on her. Her condition had progressed so far that all I had to do was to drain, and she got well promptly without any complications. However, I attribute my success in this case to the fact that she was brought to me early. Where menstruation is delayed one year, I think we should make an inquiry, in order to ascertain, if possible, the reason for it.

DR. WILLIAM T. BLACK, Memphis: I have been interested in this subject particularly from an embryological standpoint. It is not so unusual to have an absence or atresia of the vagina as one would think. I have seen three or four cases in which there was an atresia of the vagina or absence of the vagina. I have also had two or three cases of hematicolpos resulting from imperforate hymen. These latter cases are not usually discovered until after the beginning of menstruation. They may have an accumulation of menses, the natural secretion, but after puberty they fail to menstruate and they have what we call delayed menstruation. This simply brings up the point that all cases of delayed menstruation should be investigated to find out whether or not the patient has atresia of the vagina or imperforate hymen. You can determine that by a rectal examination and from inspection. The case reported is a very good illustration of the force that the blood may exert on the uterus as it accumulates each month, gradually dilating the cervix and body of the uterus and extending up into the tubes. Naturally, when the blood goes from the uterus into the vagina we have clotting of the blood, and then the blood, as a rule, will not back up through the cervix unless great force is exerted. The internal os is a barrier to everything, even force. The only thing that goes through the internal os usually is the gon-

ococcus and spermatozoa, unless dilated. The blood being present for a long time, softens the cervix the pressure produces a softening, and in that way it gradually dilates. You may expect to find hematosalpinx oftener from these conditions where you have an atresia of the cervix. In the latter condition, the blood is likely to regurgitate back up into the tubes. Whether menstruation takes place in the tube as the result of the internal secretion of the corpus luteum is questionable. When blood is found in the tubes during menstruation, it is generally conceded that menstruation takes place through the internal secretion of the corpus luteum thru the medium of the endometrium and regurgitates into the tubes. We can account for hematosalpinx in atresia of the cervix, but not so readily for atresia of the vagina or imperforate hymen.

I have seen two cases of acquired atresia of the vagina, one in a woman who had used strong carbolic acid douches with the result that there was ulceration followed by atresia. I have seen one or two other cases the result of applications of heat to the cervix. One was a case in which the atresia was produced by Percy cauterization, where the cooled speculum was not used. This woman had a complete atresia of the vagina. These cases are unusual, and the doctor just happened to have had the coincidence of cystic tumor of the ovary. He would not have been surprised if he had had the twisted pedicle of an ovarian cyst.

DR. W. D. SUMPTER, Nashville (closing): The paucity of literature of this subject, as well as the limited amount of experience that most of us have had, except those who are fortunate enough to see these cases in hospital practice, has prompted and stimulated me to bring this subject before the Association, not because of any operative work but purely because it may enable members of the profession to make better diagnosis of conditions that I believe are hard to diagnose. I say that because I am willing to have the other fellow help me out in the diagnosis of a difficult case, and I am thankful to any one who makes the road easier for me to travel.

I sincerely believe that every girl who does not menstruate ought to be examined with a glove on the finger to protect the doctor and to examine the patient through the rectum, taking particular care not to do her any damage. With the finger in the rectum one can soon determine the vaginal outlet that ought to be there, and that is one of the chief purposes in bringing this subject before you.

I take it, that all of us would make better examinations if we had these cases to deal with every day. Then we would be looking for them if they occurred oftener.

In a case in which I cannot palpate the ovaries and tubes by the side of the tumor biannually, I would not hesitate to open the abdomen and make a through inspection. If you cannot feel the tube mass or feel the ovary, and there is no tubular engorgement, you can take a chance in believing you have not anything there that is abnormal.

Dr. Fancher spoke of the fatalities in these cases. When he thrust a scissors into the mass and tarry

contents poured out, he thought he had infection of the outlet, when he really had peritonitis or a ruptured hematosalpinx that had not been observed, or there was a bleeding vessel or some disturbance of resistance around that area sufficient to allow peritonitis to occur from adhesions or to occur from this mass which was protruding up into the abdomen. Those are the two points of significance which are considered in the paper. Furthermore, a thorough examination through the rectum for other reasons in gynecologic work, besides looking for imperforate hymen, should appeal to us to go slow in evacuating fluid because we feel a bulging mass.

CASE REPORT.

GEORGE R. McSWAIN, M. D., PARIS.

This case is being reported not especially because of any very unusual features for while, not a common occurrence, there are plenty in the literature. It is rather a plea for immediate operative intervention in these acute abdominal conditions which are essentially surgical from the onset.

In June, 1920 I was called to see a man aged 34 with a negative family history. He had had previous attacks of acute pain in the right iliac region for several years, one attack two years ago which was diagnosed appendicitis and operation was refused. Had influenza during the winter of 1918. Past history otherwise negative. Soon after eating dinner on the date of his illness he was seized with sudden, acute, sharp pain in epigastrium. He was nauseated and vomited once during the course of the afternoon. His bowels moved three times from the onset up to 7 P. M. at which time I saw him. He stated that he had continued his work, but had pain all over abdomen during the entire afternoon. His kidneys had been acting frequently. At seven P. M. his temperature was 103, respiration rather rapid as was the pulse. The entire right side was of a board-like rigidity, with tenderness which was slightly more marked over the appendiceal region. He was tender higher up also. Operation was advised and refused. A consultant was called who advised an operation also. But the patient felt that he could afford to put it off. During the next day his temperature was lower. He was given enemas at frequent intervals and nothing by the mouth. Ice cap over

right side. The temperature was from 99 to 100 during the entire day. At three o'clock in the afternoon, he had a slight chill with more pain and nausea, following this his temperature began to rise until it reached 103 at seven P. M. 24 hours after I first saw him and about thirty hours after onset. Feeling sure that more and very serious trouble, probably disaster was impending we insisted that he submit to operation. His white cell count at this time was 16,500. At nine P. M. we operated through a right rectus incision, feeling that we would find either a ruptured appendix or a perforated gastric or duodenal ulcer. As the cavity was opened the omentum rolled out, the appendix was found, closely bound down by adhesions, but not acutely inflamed. There was a Jackson's membrane with rather strong fibers. The appendix was removed quickly. Feeling that there must be more pathology present I examined the gut. About four inches from the ileo-cecal valve there was a distinct kink in the ileum. The fibers of the membrane extended to this portion of the bowel. The ileum for about five inches was black, but did not appear destroyed. Moist warm towels applied showed a gradual return to better color. So we divided the peritoneal hands, covered over raw surfaces, dropped the gut back and closed up. The patient went on to an uneventful recovery and has gained in weight, having been in excellent health to date.

Now this patient presented about the usual train of symptoms found in many of the surgical crises of the abdomen but it goes very

clearly to show the necessity of early operation. There is no doubt that a delay of twelve hours in this case would have necessitated a resection and very probably we would have lost the patient. There is no sure way of telling beforehand what we are going to find. A catarrhal appendicitis may become a gangrenous one very quickly. A gut may be destroyed while we delay, so I insist that when abdominal surgery is indicated in these acute cases it is indicated immediately. Let us not give him a dose of morphia and wait until morning. Nor should he be filled with calomel, oil, salts, nor anything else that will tend to increase paristalsis and make the condition worse. Morphia may be given only in two types of cases. First, those in which it is decided to operate, after the diagnosis is made and the decision reached, and second in those who refuse operation absolutely.

The above case was evidently one of Jackson's membrane, a Lane's kink, with an associated chronic appendicitis. Jackson's membrane and the Lane kink are very closely associated and are very interesting in the study of the surgery of the right iliac fossa. Jackson's membrane is described by him as follows: "From a point just at the hepatic flexure to 3 inches above the caput there spreads from the parietal margin over the external lateral margin to the internal longitudinal muscle band a thin vascular veil in which long straight unbranching blood vessels course, most of which

are parallel to each other and take a slightly spiral direction over the colon from the outer peritoneal attachment to the inner, lower portion of the gut ending just above the caput. Coursing with the blood vessels are numerous shining bands of connective tissue which broaden as they go and end in a fanshaped attachment at various points on the anterior and inner surfaces of the colon."

The Lane kink occurs usually within the last six inches of the ileum. The name expresses the condition, being simply a kinking of the gut which has been explained by Mayo, Lane and others. Both the Lane kink, and the Jackson's membrane may give a train of symptoms such as pain, tenderness, constipation, mucous discharge, etc. Surgeons have been accused of calling on Jackson's membrane and Lane's kink to help them out when they could not locate the trouble, comparable to the attacks of "Biliousness" described by internists. However both these former conditions may and do cause symptoms and may cause serious difficulty as the above case shows very conclusively.

As stated in the beginning this paper is a plea for early operative interference when surgery is indicated at all in these acute cases. There is nothing to be gained by delay and often the difference in a few hours may mean the difference between a well patient and a dead one. Let both the surgeon and the patient have a fair chance.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

AUGUST, 1922**MALARIA CONTROL.**

The fight for the control of malaria in this state, so ably inaugurated by the ex-Secretary of the State Board of Health. Dr. Olin West is being ably extended this year by the Bureau of Rural Sanitation, of the State Board of Health, of which Dr. E. L. Bishop is the directing head.

The program for the control of malaria has been developed through the cooperation of the Tennessee State Board of Health, the United States Public Health Service and the International Health Board of the Rockefeller Foundation, together with the financial cooperation of each municipality or community in which the work is being carried out. For this purpose our State legislature has set aside the sum of three thousand dollars per annum and for each dollar appropriated by the state, the International Health Board contributes an equal amount and the municipality or community in which the work is being done, gives a sum equal to double this combined amount.

This summer, new demonstrations are in progress in Martin and in Covington. Brownsville, Humboldt, Dyersburg and Union City have continued their demonstrations and with generous progressiveness are bearing practically all the expense.

The city of Memphis, through its own Health Department and at its own expense, in conjunction with the United States Public Health Service has been and is carrying on malaria control on a wide scale.

In addition to the general malaria control work in individual areas, Gibson County is to put on a county-wide malaria control program, under the direction of its own County Health Department.

Recently through cooperation with the Bureau of Rural Sanitation of the State Board of Health, the Court of Gibson County established a full-term health department, consisting of a full term health officer, three public

health nurses and a sanitary inspector and technician, which will make malaria control a leading feature of its general functions.

In the several municipalities of the county the work will consist of intensive mosquito control measures, while in the rural areas, education, screening, mosquito control and the use of the standard treatment for malaria with the purpose of eliminating carriers, will be used.

Throughout this campaign the work will be done by and with the active assistance of the practicing physicians of the county.

In all this plan the help of the United States Public Health Service is given through medical officers specially trained and of international reputation in malaria control work.

With all these able agencies laboring in unison much can be expected and will be accomplished in the saving of time, money, suffering and human life.

GENERAL GORGAS.

The following appeal will receive immediate response from the profession of this and all other southern states, for two reasons. The beneficent fruits of his works are more directly applicable to our sanitary problems than to those of other parts of the union, and then he himself was a southerner, for William Crawford Gorgas was born in Mobile, Alabama, on October 3, 1854. His father was Gen. Josiah Gorgas of the Confederate Army, who, after the termination of the civil war became Vice-Chancellor of the University of the South at Sewanee, Tennessee, where the future Surgeon General received his university education and his A. B. degree in 1875.

Four years later he graduated in medicine from Bellevue Hospital Medical College, University of New York and 1880 entered the Medical Corps of the United States Army.

The results and effects of his achievements are not sectional nor even national, but international, the peoples of many countries being his beneficiaries.

THE GORGAS MEMORIAL FUND

At the St. Louis Annual Session the Board of Trustees reported to the House of Delegates that in response to a request received from the directors of the Gorgas Memorial Institute of Tropical and Preventive Medicine for the cooperation of the American Medical Association,

the Board had taken action which resulted in the appointment of a committee, representing the American Medical Association, to act on the project. The following were appointed: Dr. George E. de Schweinitz, Philadelphia; Dr. Charles W. Richardson, Washington, D. C., and Dr. Fred B. Lund, Boston.

The House of Delegates unqualifiedly endorsed the Gorgas Memorial as a tribute to a past President of the organization and one of its most distinguished and loved members. At its recent meeting the Executive Committee of the Board of Trustees received the following statement from the committee and directed its publication.

Statement and Appeal for Cooperation.

As a result of the stimulating suggestion of President Porras of Panama, it has been resolved that a fitting memorial shall mark the humanitarian service of the late Major General William C. Gorgas, and the beneficent influence of his life and work on mankind throughout the world. Following the thought of President Porras, it has further been decided that this memorial shall take the form of a scientific institute for the study of tropical diseases and of preventive medicine.

No better place could have been selected than Panama City, the gateway between the Atlantic and the Pacific, where General Gorgas' well-planned and executed work made possible the building of the Panama Canal.

It is hardly necessary to call the attention of the medical profession to the far-reaching effects of General Gorgas' work on the welfare of the whole world, especially in tropical and semitropical climates, and in all places subject to the inroads of infectious disease.

We of the medical profession remember him as our Surgeon General during the early part of the World War. We remember his prompt recognition of the necessity of bringing into active service large numbers of physicians and surgeons from civilian life. We remember his genial and kindly nature, his high character, and his steadfast effort directed toward the organization and equipment of the Medical Corps of the Army. We remember the patriotic response. We remember him as a great sanitary officer, to whom we wish to pay a lasting tribute.

A central committee has been formed, with Admiral Bristed, retired, ex-President of the

American Medical Association, as its president. The American Medical Association has appointed a committee of three to work in accord with the central committee, and through its members this appeal is made to the American medical profession.

The plan is to build at Panama an institute for the study of tropical and infectious diseases, with a hospital, laboratories, departments for research and all other facilities required in an institute of this character, erected and administered according to the most progressive, modern ideals. The Panamanian government, owing to the far-sighted, philanthropic vision of President Porras, has donated the great Santo Tomas Hospital, and also the ground on which it is proposed immediately to construct the buildings as they have been described. Dr. Strong has been appointed the scientific director.

In conjunction with this work in Panama, there will be established in Tuscaloosa, Ala., the Gorgas School of Sanitation for the purpose of training county health workers, sanitary engineers and public health nurses, especially educated to deal with the problems peculiar to the Southern states.

An endowment of six and one-half million dollars will be required to enable the institute to carry on the work according to the plans which have been formed.

The Republic of Panama has demonstrated its sympathetic and practical interest in this enterprise with splendid liberality. The physicians of our country, and especially the members of the American Medical Association, surely will not disregard the memory of a former President, and will seize the opportunity to make in this respect a contribution of which they will be proud.

The campaign for funds is to be international. A large response is expected from North, Central and South America, since the nations of these countries have been the chief beneficiaries of the labors of General Gorgas. It is fitting that his co-workers of the American medical profession should be requested to respond generously to this appeal. It is hoped that every member of the American Medical Association will make as liberal a subscription as possible. Any sum will be gratefully re-

ceived. Cheeks should be drawn to the order of the "Gorgas Fund" and should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago.

Charles W. Richardson, *Washington D. C.*,
F. B. Lund, *Boston*.

G. E. de Schweinitz, *Philadelphia*.

DEATH OF DR. GUS SHIPLEY

Athens, Tenn.

At a meeting of the McMinn County Medical Society, held in Athens, May 8th, 1922, the following Memorial was read and unanimously adopted:

"Our friend and brother, Doctor Gus. Shipley, is no more. Not again shall we elasp his hand in fraternal greeting; never more may we hear his voice of hearty hail and good cheer; his place in our circle, his seat in our councils, is vacant, and only the memory of his genial personality, with its jolly good fellowship, remains with us. Our heads are bowed in sorrow, and our voices are softened, as we the members of the McMinn County Medical Society, meet in the overshadowed gloom of his sudden and untimely death.

To each one of us the report of Dr. Shipley's death came as a paralyzing shock, bringing with it a sense of great loss; to those of us who have known him longest and best, the blow was hardest, for we felt that out of our lives had passed a kindly entity, upon whom long years of personal intercourse and intimate association had taught us to lean, and rely, and that for us, the loss was one that could never equally be supplied.

Each and all of us recognized in Dr. Shipley, a man of large intellect and wide general information; a student and thinker, with deep insight into public affairs and the life of the world. In the learning and literature of his profession, he was well to the front, and with all skillful and successful in their practical application, both as a Surgeon, and as a physician in general practice.

A rugged man, of strong likes and dislikes, who thought for himself, and had the courage of his convictions.

At times a man of rough speech, unhesitating, outspoken, even bitter, when, in his opinion the occasion justified, and yet, in spite of all, his inner, better self, was a man of tender heart and great kindness, gentle as a child,

soothing and helpful in his ministrations to the afflicted, sympathetic with the sorrowing, and easily moved to tears by the sight of helpless distress.

One of the first Presidents of our Society, and an enthusiastic, active member, the Society will keenly feel his loss; let us close up the gap in our circle as best we can, binding ourselves yet more firmly together to carry on the great work in which he was so greatly interested."

Dr. Shipley was fifty-six years old at the time of his death on April 30, 1922, and is survived by an invalid wife, one daughter and two sons.

PERSONALS.

Dr. Geo. R. McSwain, of Paris, is combining pleasure and study in the cooling breezes of Rochester, Minn., during dog-days.

THE KNOX COUNTY MEDICAL BULLETIN.

"On August first the Society will vote on revision of Constitution and By-Laws as recommended by special committee (Dr. H. H. McCampbell, Chairman, Dr. L. L. Sheddan, Dr. Oliver W. Hill and Dr. J. C. Hill). The recommendations were read at the last meeting. Below is a copy of same, with the exception of some minor changes.

CONSTITUTION.

Article 3. New members must be graduates of a recognized Medical School.

Article 6. The annual meeting of the Society shall be held first meeting night in January at which time the officers shall render their annual reports and the officers of the ensuing year be installed.

BY-LAWS.

Chapt. 1, Sec. 1. This Society by reason of its affiliation with the Tennessee State Medical Association becomes the official organization of the County of Knox.

Chapt. 3, Sec. 3. The Secretary shall render a statement to each member on January first and a second statement to those not paid on February first and on the first meeting night in March he shall announce the names of those who have not paid their dues and strike their names from the roll.

Chapt. 4, Sec. 5. Nomination of officers shall be made from the floor on the night of the

election; a majority of those present and voting shall elect.

Chapt. 4, Sec. 12. All appeals shall be heard at a meeting called for that purpose, from the decision of the Judicial Council.

Chapt. 7. This appeal shall apply to state or public service corporation.

Chapt. 8. Two-thirds of the members present and voting shall be necessary to adoption.

Chapt. 10, Sec. 1. Subsequent payments shall be due at the beginning of the fiscal year following.

Chapt. 10, Sec. 5. Any member who has not paid dues for fiscal year shall be automatically dropped March first.

Chapt. 2, Sec. 4. Candidates rejected must wait one year before again applying for membership."

JESSE C. HILL, Sec.

MISCELLANEOUS

THE VIEW OF A LAYMAN.

The editor of a great daily newspaper is, of course, in position to observe the trend of things and is usually one who will give expression of his views after exclusive observation and careful consideration. The editor of the *St. Louis Post Dispatch*, being moved by the address of President de Schweinitz at the recent meeting of the American Medical Association, presented some of his opinions relative to medicine in the following editorial:

The New Day in Medicine.

In his speech of acceptance of the presidency of the American Medical Association Dr. George E. de Schweinitz went to the very heart of the subject of the relations between the medical profession and the public. There is a new age in medicine other than improved devices in fighting disease. It concerns the policy of the profession toward the public in the application of science. Some physicians have resisted professional progress in this line. They would abolish community hospitals and health centers and maintain the strictly private relation which consists of treatment when the doctor is called.

The answer of Dr. de Schweinitz to this attitude is that a "transition from individual to organized practice already has begun" and that the movement is rapidly spreading. This means that the progressive leaders recognize the pro-

fession's obligation to the public in fighting disease regardless of the effect on private practice. They regard the benefits of medicine as belonging to humanity and not to the doctors.

Dr. de Schweinitz cites a recent investigation as showing that when preventive public health measures are put into effect with the co-operation of the physician, "not only is the number of people applying to the practitioner for treatment increased, but this work has been made simpler and more effective." When idealism is made to pay it ceases to be idealism. But it must not be forgotten that before it was known that idealism in medicine would pay many doctors spent years of devotion to public health rather than to private fee.

With the profession under such leadership as Dr. de Schweinitz and his supporters the public will feel no misgiving toward the organization of men who, more than any other group of equal number, hold in their hands the power of life and death. The public, moreover, should ally itself with this organization to stamp out quackery and drive from the profession elements that would exploit the people rather than assist them to health. It can do this by fighting such measures that put over the last Missouri Legislature to grant physician's licenses to applicants who pass a state examination, regardless of their education and training.—*A. M. A. Bulletin*.

EFFECT OF QUINIDIN ON STRIPED MUSCLE.

Experiments made by J. G. Brody, Cleveland (*Journal A. M. A.*, July 29, 1922), with frog's gastronemius or sartorius, immersed in dilute quinidin solutions, show the following variations from the corresponding normal muscle (immersed in unpoisoned Locke's solution): (1) The height of contraction is diminished. (2) With tetanizing current, the height of contraction is not so well sustained. (3) The muscle ceases to respond to any stimulus much sooner than the corresponding unpoisoned muscle. (4) Load fatigues it more easily. (5) About ten stimulations a second cause a completely fused tetanic contraction in normal muscle; but with the quinidin muscle, the fusion is usually incomplete, no matter how frequent the stimulation, and becomes less and less complete the more the muscle is fatigued or

loaded. (6) The quinidin muscle, therefore, responds intermittently to a tetanizing current. These facts can be conceived as the depression of the muscle; show recovery of excitability, and consequent failure to respond to rapid stimulation, until the muscle has rested; therefore, intermittent response to frequent stimulations, the rhythm of the contractions depending not on the frequency of the stimulation, but on the rate of recovery of the muscle. In consequence of the rest, the contractions are strengthened. This seems to furnish a plausible explanation of the effect of quinidin on auricular fibrillation.

VITAMIN THEORIES.

The essential experimental facts about the functions of the best known vitamins have become sufficiently familiar to justify the belief that these newly recognized food factors furnish something of importance in a human diet. Holt¹ recently summarized the service which the newer knowledge has rendered by pointing out how it has helped to place the whole subject of nutrition on a better scientific basis. The experimental has been substituted for the empiric method in determining the value of the different foods. Formerly we might know that certain foods were desirable and necessary; now we are often able to say why such is the case and to determine their precise value in nutrition.

The study of vitamins has helped to make clearer why a variety of foods is so essential to well being, and how danger may follow when diet becomes restricted from either necessity or caprice. Deerying the indiscriminate use of alleged vitamin-bearing preparations as popular therapeutic agents, Holt further utters the warning that until they have been confirmed by adequate clinical experience there is some danger in relying too much on the results of laboratory observations on animals of a different species whose physiologic needs may be different from those of human beings. In a somewhat similar strain, Mitchell² has asserted that in the total lack of quantitative data on the vitamin requirement of man, and in the general absence of mal-nutrition or disease among people in this country which can with any degree of probability be diagnosed as involving vitamin deficiencies, it seems premature to formulate recommendations for the balance-

ing of diets with respect to vitamins. It is pointed out that the classic experiments are conducted in each instance on species peculiarly susceptible to the particular deficiency under investigation. However, this sort of criticism is a conventional one in medicine. While admitting the background of truth in it, we must recall that the clues furnished by animal experimentation have led to so many helpful avenues of information that it would be scientific folly to fail to heed them, even in our as yet inadequate understanding of the possible bearing of vitamins on human welfare. There is no necessary conflict between an open mind and conservatism in scientific judgment. Hence we are glad to reiterate the warning of Mitchell, when he writes:

"At a time when popular periodicals are widely publishing irresponsible articles on vitamins, ignorantly or deliberately creating an entirely distorted popular conception of them, and when commercial concerns are widely advertising purely hypothetical advantages of vitamin preparations, it is particularly important that investigators in nutrition exert great care in the wording of statements as to the practical significance of vitamins in every day life. Otherwise there may become unwilling accomplices in the perpetration of a gigantic fraud upon the American public."

It is in harmony with such conservatism of statement, we believe, that the recent report of the Council on Pharmacy and Chemistry of the American Medical Association on yeast preparations has been formulated.³

With so much uncertainty still admitted, it might seem futile to discuss at this time the theories of the mode of action of vitamins. However, the history of science attests that its development has more often been promoted rather than retarded by the leavening influence of hypotheses. Most investigators of the vitamins have looked on them as functioning somewhat as hormones are supposed to act in the organism, namely, as stimulants to certain physiologic mechanisms. Others have imagined the newly discovered factors to be essential components of some, at least, of the living tissues; thus they would be quite as indispensable as are other structural units of the body, such as certain amino-acid groups, calcium, phosphorus or iron. A further group of students has assumed the vitamins to be primarily cata-

lytic in function, thus behaving like the well known enzymes. Hess¹ of Zurich has lately offered somewhat indirect evidence that the anti-neuritic vitamin, which relieves the symptoms of polyneuritis in animals fed on diets devoid of vitamin B, contributes in some way to the production of oxidative enzymes in the body. Studies in vitro on the tissues of polyneuritic pigeons indicated to him a decrease in the oxidative enzymes usually found in well nourished animals. On this hypothesis the avitaminosis is an expression of poverty of the cells in the factors that facilitate tissue respiration. This is one of the many guesses which the future will need to evaluate in the physiology of vitamins.—*Jour. A. M. A.*, July 29, 1922.

1. Holt, L. E.: The Practical application of the Results of Vitamin Studies, *J. A. M. A.* **79**: 129 (July 8) 1922.

2. Mitchell, H. H.: The Necessity of Balancing Diets with Respect to Vitamins, *Science* **56**: 34 (July 14) 1922.

3. Yeast Preparations, New and Nonofficial Remedies, *J. A. M. A.* **79**: 135 (July 8) 1922.

4. Hess, W. R.: Die Rolle der Vitamine im Zellchemismus, *Ztschr. f. physiol. Chem.* **107**: 284 (Dec. 21) 1921.

EXPERIMENTAL STUDIES WITH PROPRIETARY VITAMIN PRODUCTS.

Julius H. Hess, Josiah J. Moore and Joseph K. Calvin, Chicago (*Journal A. M. A.*, May 13, 1922), made a study of some so-called concentrated vitamin products to ascertain, if possible, whether or not the claims made for them were well founded. The products studied were: Metagen, Vitamon, and one which contained orange juice and desiccated pig's liver. Experiments showed that Metagen as obtained on the open market contains no demonstrable amount of antiscorbutic substances. Animals fed a scurvy producing diet, plus Vitamon, without exception developed scurvy in from fourteen to sixteen days. The product which contained dried orange juice and desiccated pig's liver when fed to guinea pigs in large doses caused diarrhoea, rapid loss of weight, and finally death. It was the author's impression that this was due to a toxic effect of the product. These three products were found to contain insufficient antiscorbutic vitamins to protect guinea pigs from scurvy, when administered in quantities recommended as protect-

ing doses for infants or children. Studies were also made on the antineuritic vitamin, or water soluble B contained in these three products, and also in Yeast Vitamine-Harris. A pigeon fed on metagen as prophylactic treatment remained free from signs of polyneuritis for a period of ten weeks, after which time the disease developed. Birds in which the disease developed were cured by the administration of Metagen, but less rapidly than pigeons in a similar condition placed on fresh yeast. Pigeons on Vitamon developed polyneuritis, although less rapidly than the control birds averaging about six weeks. Yeast Vitamine-Harris Tablets prevented and cured polyneuritis in a manner similar to fresh yeast. In our experimental work, however, the equivalent of three cakes of yeast was fed daily. It appears from these experiments that the process of manufacture and subsequent aging of the concentrated vitamin products have not caused as much deterioration of the antineurotic as of the antiscorbutic properties. All the products studied were very low in antiscorbutic properties, and while all of them contained water soluble B, they had a much lower potency than fresh yeast, with the possible exception of the Yeast Vitamine-Harris preparation. It is becoming more firmly fixed in the minds of leading investigators that, except to meet specific indications, as in times of famine and certain economic upheavals, such as in war, the best method of obtaining sufficient vitamins is through a proper selection of foods. Vitamins should be obtained from the dairy, the grocery and the market, not from the drug store.

GETTING RID OF MOSQUITOES.*

DR. HERMANN M. BIGGS.

New York State Commissioner of Health.
Hints.

IN THIS STATE there are many species of mosquitoes but only three kinds that are at all numerous. Of these three the most common is known as "Culex." While "Culex" is a great annoyance and a pest, it is, so far as known, not capable of carrying disease. Another type ordinarily found is the anopheles, definitely known to be a carrier of malaria. Less numerous is a third species, the yellow fever mosquito, *Stegomyia*.

*Modified and adapted from Radio Health Hints

It became possible to build the Panama Canal in the swamp lands of the torrid zone only after effective methods had been developed to get rid of the millions of mosquitoes which bred in the stagnant swamps. The same simple methods used under the world famous administration of General Gorgas can be applied by anyone at home. Of course, where wide areas like swamp lands have to be treated, it is a matter for the community or the county to handle rather than the work of an individual.

There are three ways of getting rid of mosquitoes: by draining or otherwise destroying their breeding places; by killing them with oil while they are in the undeveloped or wriggler stages of growth; and by providing natural enemies that feed on wrigglers. All three methods were used effectively at Panama.

Mosquitoes can only breed in stagnant or still water. By draining swamps, filling in low places and covering over or overturning all receptacles that will hold water it is possible greatly to reduce the mosquito population.

The mosquitoes deposit eggs in large numbers on the surface of still water. In a few days they develop into the larval stage and are then commonly known as wrigglers. In a short space of time they grow into a larger form known as pupae. In both of these forms they have to breathe and in order to do this they are obliged to come often to the top of the water and stick their short breathing tubes above the surface. If a thin film of oil is spread across the surface of the water these breathing tubes become clogged with oil and the young mosquito dies of suffocation. A few drops of coal oil or kerosene or any other light, cheap oil will spread over a large surface area and thus prevent the development of mosquitoes. In using the oil, however, it is necessary also to seek out and fill all depressions and to overturn or destroy all small receptacles capable of holding quantities of water. An uncovered rainbarrel or a stopped up house gutter will serve as a breeding place for millions of mosquitoes while a few tin cans half filled with rain water will supply enough of these pests to annoy a whole neighborhood.

Sometimes it is impracticable to oil a lake, pond, or slow-flowing stream. In such cases it is possible to accomplish the destruction of mosquitoes by stocking with minnows, gold fish, roach, and certain other small fish which feed on the mosquito larvae and pupae.

CARE OF THE BLADDER IN PREGNANCY LABOR AND THE PUERPERIUM.

If, as has been stated, pathogenic bacteria are present in the bladders of more than 50 per cent of women in labor, the normal changes of pregnancy in the bladder, plus the injuries of labor, in the opinion of H. W. Shutter, Milwaukee (*Journal A. M. A.*, Aug. 5, 1922), provide all the factors necessary for the production of infection. What, then, is to be the course in preventing and combating puerperal retention, ischuria and cystitis. The bladder should be emptied just before the woman leaves the delivery table. As soon after labor as it is reasonable, she should be urged to void. If necessary, she may be propped up in bed to accomplish this. Overdistention should not be allowed to develop. If the woman can not be made to void, and in one's opinion the bladder is full, she should be catheterized. The care of the bladder should not be left to an inexperienced attendant. Strychnin, ergot and pituitary extract are sometimes of value in stimulating the bladder muscles, especially when augmented by the increased intra-abdominal pressure of the erect posture. A hot enema, the electric current and suggestion are often effective. Hexamethylenamin, in combination with acid sodium phosphate, should be given by mouth in most cases in which catheterization has been necessary. After each catheterization, a dram of 20 per cent argyrol should be left in the bladder. If pus appears in the urine previously clean, daily irrigations of warm sterile boric acid solution usually clear the condition rapidly.

THE REAL THINGS IN MEDICINE.

The minimum requirements for a career in medicine are a preliminary education, four years in a medical school, and a license to practice. While these requirements are indispensable, they are by no means sufficient, says Hubert A. Doyster, Raleigh, N. C. (*Journal A. M. A.*, Aug. 5, 1922.) Three higher attributes stand out as real elements that make for a successful physician; without these, real success in medicine is impossible: brains, culture and character. Brains are the alpha and omega of the man of medicine. Culture is refinement, accuracy, poise, resource-

fulness; it is not effeminacy, weakness, conventionalism, impracticability. Detracting not one whit from the appeal for better mental equipment, it appears even more timely to emphasize the greater need for moral qualification in the physician. The character of a physician is his most priceless property. It is what he stands for and whom he stands with; it is his attitude toward life; it is "what God sees him do in the dark." Truth is the goal; it develops character, and character tells in one's work. Too many are entering the medical profession without good working consciences, without a keen appreciation of the difference between right and wrong; too many are coming into an honored and honorable calling with low standards of trade and traffic in their souls; too many get in who are not gentlemen to begin with and can not be made gentlemen to end with. Today the young physician frequently feels compelled to ask his associates, "What do I get out of it?" when he might better ask himself, "What am I putting into it?" Greatly to be desired is a stronger effort to train the moral perception of medical students. They must be inspired toward a high-minded estate. In the speech and bearing of graduates of certain medical schools can be recognized just exactly the outlook on life and the regard for our profession held by their teachers. It is an unconscious percolation. The fine sense of intuitive right-thinking and truth-loving can shine through both precept and example. Morals can not be legislated into people but ideals can be educate into them.

THE LIMITATIONS OF INTRAVENOUS MEDICATION.

The practice of intravenous medication has come to the front to an ever-increasing extent; and, though by no means a new procedure, its application to the treatment of disease has assumed such proportions that Carl Voegtlin, Washington, D. C. (Journal A. M. A., Aug. 5, 1922), regards it as both timely and important to consider the real merits and limitations of this form of therapy. The discovery of intravenous medication is accredited to Christopher Wren, a professor of astronomy at Oxford University, who, in 1656, made experiments on dogs, and showed that medicines could be introduced directly into the veins

without disastrous effect. A year later (1657), the first intravenous injection was made on man, and this was followed by numerous attempts to treat diseases by this method with a great variety of drugs. The modern application of intravenous medication began with Baccelli's introduction of the intravenous injection of quinin for the treatment of malaria (1890). This was soon followed by Crede's treatment of septicemia by means of intravenous injection of colloidal metals (1901). The reports of this period, as of the former, showed, however, that intravenous medication is not without danger, and consequently it did not come into vogue. About twenty years later (1910), the discovery and use of arsphenamin in the treatment of syphilis revolutionized medical practice in this respect. The intravenous use of arsphenamin and its substitutes has done more than any other single factor to popularize intravenous treatment. The demonstration of the relative harmlessness of intravenous arsphenamin injection has prompted physicians to apply this method within recent years to other drugs and to other diseases, principally on the assumption that intravenous injection of necessity followed by a more powerful therapeutic effect than in the administration of the drug through other channels. The fact was forgotten that the intravenous administration of arsphenamin was simply an attempt to avoid pain and local reaction, and that it was not introduced in order to increase the therapeutic effect. With regard to the efficacy of intravenous quinin injections, clinical observers agree that the action in extreme cases is more prompt than when the drug is given by mouth, and the patient's life may thus be saved. However, as soon as the critical condition has passed, quinin should be given by mouth for the reason that the available evidence shows that malaria is not more readily cured by intravenous medication; and this is supported by some recent findings which indicate that about 90 per cent. of the quinin injected intravenously in man disappears from the blood within one minute, and is stored in the tissues. Another example of the superior therapeutic effect of intravenous medication is the administration of salt solutions in severe

hemorrhage. Voegtlin states that, what has been said concerning the superior value of intravenous medication with regard to the therapeutic effect is sufficient to raise a question as to the unscientific claims made by certain commercial interests who advertise a great variety of drugs put up in solution for intravenous use. Most of these products have not been included in New and Nonofficial Remedies by the Council on Pharmacy and Chemistry, because they are sold under misleading claims regarding their alleged safety and efficiency. It appears that a considerable amount of evidence has accumulated in recent years which indicates that the nicely adjusted equilibriums of the blood and those of the easily accessible tissues may be temporarily upset by intravenous medication; and this disturbance may give rise to undesirable symptoms and even cause death. In many cases, untoward reactions can be avoided by introducing the drug solution at a slow rate, which permits the protective mechanism of the blood and tissues to operate efficiently; whereas, if the injection rate is too fast, this mechanism breaks down, and symptoms make their appearance as visible results of the disturbance of the chemical or physical equilibrium of the blood and tissues. Under certain pathologic conditions, this equilibrium is more easily disturbed. It is a common practice to test kidney function before and during a course of arsphenamin or its substitutes, for obvious reasons. In special cases, previous treatment with a drug which produces a cumulative effect has also to be taken into account. Having seen that intravenous medication is not necessarily superior therapeutically to other modes of drug administration, and having pointed out the numerous possibilities for injury to the patient inherent in this method, Voegtlin states that we should strive to simplify the technic of the administration of drugs wherever possible, in order to avoid the necessity of the injection of the medication directly into the circulation. The subcutaneous injection of morphin and similar drugs is an exceedingly simple procedure, which very often is left to the attending nurse. Would it not be a great step forward if such drugs as arsphenamin or its substitutes could be given subcutaneously? Voegtlin has

studied such a preparation experimentally, and so far it meets all the essential requirements. It is prepared from arsphenamin, formaldehyd and sodium bisulphite; its aqueous solutions are very stable and do not increase in toxicity on standing for twenty-four hours or on vigorous shaking. Its parasitocidal effect is extremely constant, and it does not cause any local reaction if injected hypodermically. The chemotherapeutic index or, in other words, the ratio between the curative and the maximum tolerated does is as good as in the case of arsphenamin. The drug is now being tested clinically, Voegtlin urges that every effort should be made to render the administration of such drugs as simple and safe as possible, without, however, sacrificing their therapeutic efficiency. Intravenous medication will never serve this purpose, and will always have a more or less restricted field of usefulness.

BOOK REVIEWS.

THE PRACTICE OF MEDICINE.—By A. A. Stevens, M. D., Professor of Applied Therapeutics in the University of Pennsylvania; Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Octavo of 1106 pages. Philadelphia and London; W. B. Saunders Company, 1922. Cloth, \$7.50 net.

A question often asked is "when will we have a text-book that will supersede Osler?" "Stevens, 'The Practice of Medicine'" is not the answer to the question, but is evidence that successful effort in the production of text-books of medicine continues.

His dedication of the volume "To the memory of Sir William Osler indicates the main source of his inspiration, and it possesses a clarity of style which shows that the author has escaped the blight of pedantic verbosity that is somewhat characteristic of some of the disciples of his master.

It is not a stale book.

"DISEASES OF THE THYROID GLAND"—By Arthur E. Hertzler, M. D., F. A. C. S., Professor of Surgery in the University of Kansas School of Medicine, etc. Octavo of 245 pages with 106 original illustrations. St. Louis; C. V. Mosby Company, 1922. Price \$5.00.

Quotations from the author's preface probably best outline his ideas and endeavors: "It is a new departure for the small country hospital to present to the profession the result of studies of any particular disease. The disadvantages detached workers labor under are many, but the advantages also are worth noting. The isolation

makes the investigators more free to follow their own ideas uninfluenced by the opinion of associates. The small country hospital drawing its patrons from the immediate community is better able to study the end results. It is only by frequent examination of the patient that one can obtain an accurate idea of the subsequent course in disease of the thyroid gland."

* * * * *

"The presentation of statistics has been designedly avoided. The study of our cases has brought evidence that statistics as now published are of little value. They present the disease in an entirely too optimistic light and the permanent value of any treatment is entirely overestimated."

An addition, that will likely be appreciated, to the general matter of the subject, is a chapter on the Hospital Management of Goiter Patients, by Dr. Victor E. Chesky.

This monograph will be welcomed by members of the profession who, subscribing for "Oxford Medicine," have not yet received its much belated article on diseases of the thyroid gland.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT.—Anthony Bassler, M. D., F. A. C. P., Professor of Gastro-Enterology, New York Polyclinic Medical School and Hospital and the late Fordham University Medical College; etc. Fifth edition, revised and enlarged; octavo of 977 pages, illustrated with 151 half-tone and line text engravings and 93 full-page plates (with 164 figures)

plain and in colors, from original photographs and drawings. Philadelphia, F. A. Davis Company, Publishers, 1922.

The contributions of American authors to the literature of gastric disorders have been notable from Beaumont's time to the present; Dr. Bassler's book ranks high among the several excellent works on the diseases of the stomach by Americans. The author emphasizes the fundamental importance of the patient's complaints. The methods of physical, laboratory, instrumental, and Roentgenologic examinations are described fully. The various organic and functional disturbances of the oesophagus, stomach and duodenum are carefully considered.

Dr. Bassler claims no originality for his methods of treating gastric and duodenal ulcers; it really comprises the fasting of Ewald, the hourly milk feeding and the alkaline powder of Sippy, and his own method for working down of the hydrochloric acid secretion and x-ray therapy. The author considers the x-ray a positive aid in the treatment of ulcer. He thinks that the uncomplicated ulcer is always a medical condition in the early stages, and even in instances of chronic ulcer with induration cure is often obtained.

In the new fifth edition have been incorporated the recent accepted work in secretion of gastric juice, gastric motility, and sensation. The section on x-ray examination has been enlarged. The new generally accepted fractional test-meal methods of gastric analysis is fully presented. Practical matters on duodenal and rectal feeding are included.

S. P. B.

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CANCER OF THE BREAST.*

C. P. Fox, M. D., GREENVILLE.

IN VIEW of the great publicity given the subject of cancer, by the various cancer societies for the prevention of cancer, during the past few years, it would seem unnecessary to speak to a society of medical men on the subject of early diagnosis. Although the chief purpose of this paper is not to discuss diagnosis in detail, I am, however, impressed with the fact that there is yet a great lack of appreciation of the importance of the subject, by the general practitioner, since the number of cases referred for late operation do not seem to be materially decreasing. And if I can say something that will cause the family physician, who usually sees these cases first, to realize the importance of early attention to all breast tumors, so that they may have the benefit of an early operation while they are still curable, I do not feel that my effort will have been in vain.

I will make no attempt here to detail the differential diagnosis of breast tumors, since it would be beyond the scope and is not the purpose of this paper. Furthermore the differential diagnosis of early cancer from benign tumors of the breast can not be made in all or indeed in many instances by even the most expert clinician without a surgical

procedure and a thorough microscopic study. Therefore, it is not a question for the clinician, but for the surgeon and the pathologist to decide. Hence, every patient who has a breast tumor should be referred to a competent surgeon and pathologist for examination.

I do not wish to be understood to say that certain benign growths may not be recognized and differentiated before operation and the extent of operation be governed accordingly, but, excepting certain tumors of the breast in young women under 25 years of age, all tumors that are really new growths should be treated surgically, and if there is the least doubt as to the benignancy of the growth it should be submitted immediately to the microscope, and if there is evidence of malignant change a radical operation should be done.

The history obtained from the majority of patients with cancer of the breast, who present themselves for examination, is that for months or years she has had knowledge of a painless mass in the breast. One of the most eminent authorities on cancer of the breast told us years ago that ninety women out of every hundred, who have a tumor of the breast, will some day die of cancer if not promptly treated surgically.

As evidence of the extreme difficulty in differentiating between tumors of the breast,

*Read before the Tennessee State Medical Association at Memphis, April 11-13, 1922.

I wish here to refer to a case which I had occasion to refer, some years ago, to a surgeon who was then recognized as among the greatest authorities of this country on breast tumors. My opinion was that the case was one of chronic cystic mastitis. However, on examination this surgeon was quite satisfied the tumor was cancer, and a very radical operation was done. After removing the breast numerous sections were made and no evidence of cancer could be found. The pathologic diagnosis was chronic cystic mastitis. The patient has never showed evidence of recurrence, but has always suffered the inconvenience of restricted shoulder movement, as the operation had to be followed by extensive skin graft. If a man who had done many hundred operations, and had carefully studied breast tumors for many years, can make such mistakes it seems to me that those of us who have had less experience should not assume the responsibility of giving opinions, in a condition of such grave importance to the patient, but should refer such cases to men capable of accurate diagnosis and complete operation when necessary.

There is a notion among the laity, (I am glad to say it is gradually being eradicated by education) fostered by a considerable element in the medical profession, that these tumors should not be bothered as long as they do not bother the patient. It is this idea that the intelligent and educated members of the profession should combat, as we all know that the most intensive study by the most untiring workers in cancer research has added little to our knowledge of the cure of the disease. However, the research has by no means been barren of results, on the other hand it has saved thousands of lives, and if the proper education of the doctors and the laity can be accomplished in the near future, cancer of the breast will be an obsolete disease. Since this research has led us to the early recognition of the conditions that lead to cancer, practically all of which are removable if we will only be awake to the early signs and act without delay, the cancer problem is solved.

As evidence of how this problem is being solved, I will quote from a recent publication of Bloodgood in which he says "The relative per cent of benign and malignant lesions of

the breast in over 1800 cases has changed gradually during the past 27 years and very rapidly in the past 3 years. In the first 10 years of the observations the per cent of benign lesions was 32 per cent, in the second period of 10 years 41 per cent, in the next 4 years it was 54 per cent and in the past 3 years it was 59 per cent. This increasing proportion of benign lesions has been associated with the shortening of the duration of the disease and the education of the profession and the public. If this much has been accomplished by education, the other 41 per cent can be wiped out by education since cancer rarely begins as cancer and when it does it is always a local disease in the beginning and curable by local treatment. Our problem then is to take care of the developed disease, by its prevention. Since this happy event has not yet been reached and must necessarily require more or less time for its accomplishment, we must continue to deal with the problem of best radical procedure for the cure.

After having tried out a number of different methods as described in the text books on surgery, I have been convinced of the superior merits of the technique as described by Rodman, and I seldom find occasion to use any other. As I do not find this technique fully described and illustrated in the text books, I wish to speak of some of its merits and to illustrate the technique by lantern picture. Some of the advantages which I believe it possesses over any other operation are—1st, that it more completely removes the tissues susceptible to cancer involvement, 2nd, the skin can be evenly approximated without excessive tension, 3rd, it does away with the necessity of skin graft and gives a more resilient covering for the wound, hence lessens the scar tissue that so restricts the movement of the arm, 4th, hastens the period of convalescence, 5th, requires much less after attention and is far less liable to wound infection thus reduces the liability to local recurrence. I have had no local recurrence in any case when I have used this technique, and all my patients have had practically unrestricted movement of the arm.

It would seem unnecessary for me to say that all operations should begin at the axilla,

from above downward, and from without inward toward the breast, for the reason that by this method the lymphatics are blocked before the carcinomatous tissues are in any way handled, the vessels are tied at their origin, less blood is lost and a clearer dissection can be done.

To describe the operation—The first incision begins one inch below the clavical and two fingers breadth to the inner side of the arm or internal to the sulcus where the pectoral muscle joins the deltoid. The incision is kept away from the arm so that the cicatrix which results will not involve the vessels or interfere with the movement of the arm. With one stroke of the knife the incision can be carried down to the pectoral muscle. The incision should be straight, parallel with the arm, two fingers breadth to the inner side and should be from $4\frac{1}{2}$ to 6 inches long—depending upon the size of the patient. You then thrust the index finger of the left hand under the lower border of the pectoralis major muscle, and let it emerge between the costal and clavicular portion. With a retractor the outer flap of skin is drawn outward and the muscle cut close to its insertion into the humerus. A slight dissection is then made to uncover the lower edge of the pectoralis minor muscle. The fascia should be separated from the tendon in order to avoid wounding the long thoracic artery which runs along its lower margin and parallel to it. The index finger is now introduced under the muscle and the tendon is made tense and divided in such a way as not to wound the acromiothoracic artery which runs just above and parallel to the tendon. The tendon is divided at its insertion to the coricoid. Both muscles are then retracted inward—this at once uncovers the axilla. The costoericoid membrane is now opened and largely sacrificed. This gives ready access to the apex of the axilla. In removing this membrane the cephalic vein at the upper and outer aspect branch of the acromiothoracic artery and vein should be clamped and tied.

The dissection of the axilla should begin at the apex and should be done chiefly with the gauze covered finger. An incision should be now carefully made through the fascia to the outside of the axillary vessels in order

to start the dissection from without inwards. The dissection is then carried inward with gauze. As the sheath of fat is removed from the vessels we come down to the acromial, long and alathoracic and sub-scapula vessels, and branches of the axillary artery. These with their accompanying veins should be ligated and divided—both ends should be tied. The axilla should be swept clean of all fat, fascia and glands, and when the sub-clavian glands are involved they should also be removed. Nothing should be left in the axilla save the posterior thoracic nerve in the inner aspect and the long sub-scapular nerve on the posterior aspect. The axillary contents should be invariably removed en mass and never by piecemeal.

The second incision should begin at the middle of the first and should go well above the breast, extend to the middle of the sternum and then pass down to a point midway between the sternum and the ensiform cartilage and umbilicus. This should be joined by a third incision, which begins in the lower end of the first incision, passing close beneath the breast and joining the lower end of the second incision forming a broadly oval eclipse. Its greatest diameter should be about 6 inches.

The dissection is now begun below in the epigastric triangle. The sheaths of both recti being removed—also the sheath covering the lower portion of the serratus and upper portion of the external oblique and latissimus dorsi. The knife is held in a slanting position so as to undermine the skin edges in every direction—so that the pre-mammary fat is not included in the flap. The breast is now removed by cutting the pectoral muscles at their origin and clamping all vessels cut. Complete hematoses is secured by tying all vessels and the use of hot water. Closure is begun at the axilla. After closing the vertical incision we then begin at the abdominal end of the wound and continue until the axilla has almost been reached. At a certain point the skin is pulled inward to make a triangle—thus avoiding the sight proturbance which would result if the suture line continues straight. There is no tension in the suture line. The arm is now confined to the side for only 24 hours. The patients

are allowed to sit up on the second day and leave the hospital on the 8th or 9th day.

DISCUSSION.

DR. DEERING J. ROBERTS, Nashville.—The first thing in regard to carcinoma of the breast is early diagnosis. The best prophylaxis in regard to it was stated some years ago by a distinguished operator and pathologist, that to prevent cancer we must look into the generations that precede. In our history it is necessary to go back to the grandparents. There is where prophylaxis must begin, not that cancer is always hereditary, but there is something in that. There is something also in the germ theory, for we have known such things as cancer houses. I know of one house in Nashville in which three cases of cancer occurred there at intervals of two and three years respectively, and in altogether different families. There must be something in the infection that is left behind. What it is, we do not know.

As for the treatment of cancer, it requires early diagnosis and early operation. As a rule, the surgical profession operate on cancer too late, especially of the breast. I know a great deal has been done by following the cancer development up into the axilla, but it will sometimes extend up into the deep cervical glands and will prove destructive in spite of operation.

One particular case came under my observation some years ago. A lady, past 60 years of age, was one of the members of a prominent family in Tennessee in the days before the war between the States. In later years when engaged in teaching school she came from Murray County to consult doctors in Nashville. She went from one doctor to the other, and a distinguished surgeon, and a very able internist, recommended operation and insisted on it. They had made an appointment to operate on her in one of the hospitals in Nashville the next day. It was insisted by friends that she come to see me. She did. I examined her, and a peculiarity about this case was there was distinct cancerous development in the right breast involving a segment of the gland adjacent to the nipple. It had been a little larger; it had ulcerated at one time, then it showed symptoms of shrinking or of slight atrophy. One could see that by the wrinkles in the gland. The left breast was distinctly cancerous. A tumor was there. She had pain. Most of the pain she had was in the trachea and larynx, indicating deep-seated infiltration. A hard, dry scab formed over the right breast which indicated to me that it was one of those forms of cancer that grow slowly, a withering cancer. She was three score years old. She was a timid woman and of course afraid of an operation. My impression was that if she had gone on the operating table the shock of the operation would have proved too much for her. I thought she would go along for a num-

ber of years more comfortably without operation than with it. I did not rest on my opinion. I told her to go and consult Dr. Duncan Eve who has operated on more cases of cancer in this city than any one living here now. Do not tell him you saw me or give him my opinion. Tell him you want his opinion about operation. She went to Dr. Eve and reported to me afterwards that he held the same opinion that I did. He told her she would live longer without operation than with it. For seven years I did not see that woman, and supposed she had passed away, but later I met her on the corner of Eighth Avenue and Broadway as I came out of Christ Church and was standing waiting for a car, and was looking much better than when I saw her seven years before. She had lost her pallor, she had gained weight. I said to her, "Madam, I am delighted to see you. Where have you been living?" She had been out to California visiting a sister and had spent the intervening years there; she had gotten better and had had apparently little or no trouble. She not only looked better but said she felt better. I said to her, "What have you been doing?" She replied, "I don't like to tell you." But I said, "I want to know. What has given you relief because you have been relieved." She replied, "I have the tumor there yet, but it is not as large as when I first saw you. It has given me no trouble at all." I insisted on her telling me what she had been doing. I told her I wanted the information for the benefit of others." She said she had been trying the faith cure." Ten years from the time I first examined her I found that the tumor in her breast had ulcerated and it was only a short time before it ended her life. However, she had ten years of a fairly comfortable life, but I doubt if she would have lived a week had she undergone an operation. I believe in the knife, but it must be early, and the surgeon must be sure that he is right, and then go ahead." Operations on cancer that are too late bring discredit on surgery.

"There is a time we know not when,

A place we know not where,

That shapes the destiny of men,

For joy, or e'en despair."

DR. CHARLES N. COWDEN, Nashville: I do not know of any operation that the surgeon approaches with any more fear and trembling, and where he knows so little of what the final result is going to be, than cancer of the breast. I usually try to make a diagnosis in these cases and to determine which case is operable and which is not. It is not an easy matter to determine which case is malignant and which case is not, but I have since learned from experience and from the experience of others that every case of tumor of the breast in 95 per cent of the cases, if it is not already malignant, will in a short time become so. I used to see cases that I thought were inoperable, and I have seen cases go on to a horrible death, as severe a death as could be meted

out to any one. I have come to this conclusion about it. We know as experienced surgeons we can not help these patients but we can vouchsafe to them an easy death, and with the understanding that we will possibly get rid of the external evidences of the disease, she will have metastases which she already has developed in some other internal organ and die a painless death, and not be a most unsightly thing to her family that can possibly be. If there was no other cause or excuse for us to operate than that, we can save these people from the most horrible condition that is possible. Some practitioners tell these people that they may live a few days longer, but they live in a more horrible condition, and what is a few days to a patient of this kind?

The incision that Dr. Fox has brought to our attention, it seems to me, does not give us enough view of the breast and parts at the beginning of our operation. I believe in a little more extensive opening of the axilla and of ligating the vessels at first. I do not believe his incision gives us enough access to the parts, although I have not tried it. It is a new one to me. He does not get as great an exposure anatomically of the organs as one does by the classic Jackson operation or some other operation. I do not believe we can clear up all infected glands in the axilla, but we do make a starvation process obtain there that will stay the invasion of the disease for quite a while. We get a block dissection there that will remove enough of the blood supply in the other gland that will absorb and carry on the tissues much slower. I think by our dissection there, if we do not get beyond it, we will starve the tissues so that we will be in a better condition to stop the disease where it is. There is one condition with this extensive block dissection that sometimes obtains, and that is lymphatic edema which follows extensive blocking of the lymphatics in this region. There is no more unpleasant result than that. I do not know how to prevent it, because a great many men follow a small dissection and others a large dissection, and we do not get it at all.

I have been very much interested in this paper and have enjoyed it.

DR. SMYTHE, Memphis: Dr. Fox's paper covers so much, the nature of tumors of the breast, their differential diagnosis and the indication for and against radical operation, to attempt to include all in a discussion would fill a volume, and then much of importance would have been left unsaid. The part of the paper I heard the doctor read treated mainly of the technique of radical operation for breast cancer. The doctor's opinion is one of merit, I think the technique is good. I do not know that it has any advantage over Rodman's operation, the Willy Meyer method and other methods described in the literature. I do not believe that a better method has been described than that by Willy Meyer, the description of which he published shortly after the classic

operation first published and described by Halsted, and known as the "Halsted" operation. The chief difference between the "Halsted" operation and the "Willy Meyer" is that the latter removes everything en masse from above downward, rather than from below upward as described by Halsted, in his first description of the operation which bears his name. The Willy Meyer operation is the one selected by most surgeons. I think that there is a good deal to be said in favor of the suggestion made by some surgeons—namely that the patient's interests would be best served if the surgeon removing the pathology did not have to close the skin incision. In that event he would not be so careful in shaping the flaps perhaps, more skin would be removed and there would be fewer recurrences in loco.

Gross in one operation in the earlier days made what he called a dinner plate incision allowing the wound to heal by granulation. He had twenty-one per cent permanent cures. He operated before the development of the classic operation now in vogue. His results were as good as results we have at the present time.

Many cases of cancer recurred in the skin provided that a sufficient amount of skin was not removed at the time of operation. So I say the question as to whether or not the skin can be coaptated at the time of operation is of little importance. It is of great moment however that all the pathology be removed. Briefly the questions to be decided are, first, whether or not we are dealing with a cancer; if cancer radical operation. In cases of doubt, the doubt should be removed at the time of removal of the suspicious pathology, by frozen sections or microscopic examination. The tale would be told in practically all cases if the one passing judgment is one experienced in examining neoplasms.

A mutilating operation should not be performed simply because the woman has a neoplasm in the breast, the tumor only should be removed. Neither should a patient be denied the benefit of a radical operation where a malignant growth exists.

The radical operation should be performed with as little blood loss as possible. The Rodman operation enables the surgeon to operate with the minimum blood loss. The axillary vessels are exposed, both arteries and veins are ligated close to the main trunks. The veins are tied in two places and divided between the ligatures. By so doing the remainder of the operation is practically bloodless if not entirely so. The pectoralis major and minor muscles are removed in doing this operation.

The late Dr. John B. Murphy did not remove the muscle in his last years, he removed only the fascia. Crile says that removing the fascia only, is sufficient. The object aimed at, and the one that should be aimed at, is the complete removal of all the affected tissue including the glands and lymphatics. If the glands at the base of the neck are involved it is questionable whether or not the operation ever effects a cure. If the lungs are in-

volved, determined by physical examination and shown by the x-ray, and a picture should be taken in all cases, it is inexcusable not to do so. late cases metasis having occurred to the lungs and mediastinal glands, operation should not be undertaken. Such a case is a case for x-ray and for a sufficient amount of morphine to keep the patient as comfortable as possible until relieved by death.

DR. W. D. SUMPTER, Nashville: Any time is opportune for the discussion of the subject of cancer, which has been so splendidly presented by Dr. Fox. The problem of cancer has been brought before the American public in many and various ways. The newspapers and magazines are educating the people to a great extent with reference to cancer. The people have little learning on this subject, which is always a dangerous thing. I believe the public are ready to discuss and to define their position with regard to operations for cancer. We are living in an age where excuses for innumerable accidents are made possible by rapid transit; that domestic infelicities are caused by the high cost of living and possibly by lack of affinities. There is a condition of unwise, unsafe and vicious legislation, the cause of which is readily understood.

I do not believe that there is anything today of greater import than the subject of cancer. I do not rise to discuss the operative technic, whether it is the Kocher incision or any other form of incision; nor do I rise to discuss extensive dissection which, in most cases, should be done. I do not feel in the short time we have at our disposal we can cover such a vast subject, and the subject does not concern the general practitioner or the public, but simply the surgeon who believes or thinks he is operating a little better than his colleague. I rise particularly to call attention to something that every one of us is guilty of, and I feel in a sense somewhat ashamed of it, namely, we have been guilty of inadequate and incomplete operations on our patients with cancer. We should educate every woman who comes into our office to undergo a general physical examination to determine the condition of her breasts. We should point out to her that her breasts may be diseased or may become so, and whenever you give these women a through examination, as I once before discussed and advocated before the Nashville Academy of Medicine, the women themselves are better satisfied and pleased, and so are you. The plea that I wish to make is for you to examine the breasts of women who come to your offices, not necessarily palpating the breast as if you were doing the Crede method, but lay your hand flatly on the breast, press it against the ribs, and in this way you can discover a foreign body or tumor as it goes over these rolls underneath.

literature in the last few years is the fact that from one of the largest clinics in America came the announcement that we can remove a benign or malignant tumor by a local dissection and have a frozen section made for specimens stained or hardened section made without prejudicing the chances of recovery of the patient. What was the result? A few years ago, perhaps eight or ten, Bloodgood, to whom we all look and expect much of—in a pre cancer campaign, in his enthusiasm and preachment to the profession, stated that it would prejudice the chances of a patient's recovery if perchance this small mass of tumor was malignant to remove it, and for ten or fifteen years many mutilating operations were being done when the condition was a benign one; whereas a study of all the cases that have been followed in this clinic I have referred to, showed that in those cases in which doubt existed in the mind of the attendant, the tumor or the breast could be removed enmasse and studied by frozen, hardened sections, and waiting for two or three days without any prejudice. Following up the cases years afterward it was found they had better results, they got more recoveries than where that was not done or where a mutilating operation was performed.

It has been stated that we should not take out under local anesthesia a benign tumor for fear it might be cancer, but should wait two or three days for a section; that if we did, we would take away the only chance the patient had by distributing the cancer cells. This was very disheartening to those of us who were trying to do good work. Of course, we have the frozen section method which helps us. Dr. Smythe made the statement that 95 per cent. of the cases of breast tumors can be diagnosed clinically. If you wish to make a frozen section, go ahead with the removal of the gland if you think it is malignant. If you are doubtful about frozen sections, you can wait three or four days, provided you can take out the mass and sufficient tissue around it, but do not interfere with the capsule. With the capsule, the basement membrane unruptured, you can diagnose the case clinically as a malignant tumor.

There is another point to which I desire to call your attention, and I regret there are not many x-ray men here today, namely, the use of massive doses of x-ray preceding operation adds materially to the chances of recovery of the patient. In many hospitals it is now a routine to use the x-ray after operation for cancer. In devitalized scar tissue one should guard against x-ray burns. An x-ray burn in scar tissue is a terrible thing to encounter. In using massive doses of x-ray after operation, there is always some chance of a burn occurring in pathological tissue, whereas in normal tissue you would be exempt from the danger of a burn.

DR. E. M. HOLDER, Memphis: The most pleasing thing to me that stands out in medical

DR. C. P. FOX, SR., Greenville (closing:) It would be impossible in the course of a short

paper to cover the features that were mentioned in the discussion in considering cancer of the breast. The two purposes of the paper were, first, to call attention to the importance of all tumors of the breast and their early recognition, as well as their potential tendency to cancer and to take advantage of early operation. Not necessarily all tumors of the breast are cancerous at the time these cases are referred to you. Many mutilating operations can be avoided by the proper handling and recognition of these cases early. The other purpose of the paper was to bring out the advantages of this particular operation over any other that I have so far seen used and so far as my own personal experience goes.

Dr. Smythe seems to question whether this in-

cision gives proper exposure of the axilla. I have not had any difficulty in that regard, and if the incision is properly made and retraction properly done, there is no difficulty about cleaning out the axilla. The operation is sufficiently extensive to reach almost any case. Of course, there may be cases in which there will be skin involvement, in which it would be impossible to bring the skin together without too much tension, and in such cases I would not advise it. One great advantage of the operation is the avoidance of scar tissue, skin grafting and restriction of the movement of the arm.

I do not care to prolong the discussion any further because we are all more or less impatient to hear the other papers.

A PATHOLOGIC STUDY OF TUMORS OF THE MAMMARY GLAND.*

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CHRONIC Productive Mastitis.—This is chronic productive inflammation of the breast. From a study of the enormous amount of literature on this subject, one becomes impressed with the fact that the various forms described in this condition are essentially the same. Some of the variations may be accounted for by the state of the breast at the time the inflammatory process develops, some are apparently different stages of the same process, while others merely represent the exaggeration of a single feature of the chronic inflammatory process. There has been much debate as to whether the process was an inflammatory or malignant nature. According to Twing¹ much of this argument could have been avoided if it had been recognized that chronic productive inflammation may consist of a marked overgrowth of connective tissue and of glandular epithelium and that the inflammatory process may pass imperceptibly

into a malignant hyperplasia. The condition often begins as an inflammation and ends as a neoplasm.

The condition is important both on account of its frequency, and more especially its relation to the development of tumors of the breast.

Bloodgood² consider mastitis of two types, viz., one with small cysts and moderate hyperplasia, and another with larger cysts and pronounced epithelial overgrowth. He associates the changes seen in senile involution with cystic mastitis. Ewing³ on the other hand, on account of the many clinical and anatomical features, feels that three subdivisions are warranted, viz., the interstitial, glandular and senile. Kaufman⁴ gives two types, (1) infectious parenchymatous mastitis, and (2) infectious interstitial mastitis. In the parenchymatous or glandular type, there is usually a retention of milk and an infection with the staphylococcus albus while in the interstitial type, the infecting organism is usually the streptococcus, which passes from the nipple by

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way of the lymphatics along the lactiferous ducts, to the deeper interstitial tissue. The glands may become secondarily infected.

Chronic Glandular Mastitis.—This is the common form of productive mastitis and is characterized by the production of many small cysts, considerable epithelial proliferation, and by a diffuse growth of firm fibrous tissue. Between the acini the connective tissue is more cellular and lymphocytes and plasma cells are often seen. Lukowsky⁵ considers chronic mastitis as a state of chronic irritation with the rapid development and growth of connective tissue, degenerative processes and epithelial proliferation. He regards the primary change as a connective tissue hyperplasia.

Chronic Interstitial Mastitis.—The microscopic picture presented here is that of a diffuse, interstitial productive inflammation, with marked new growth of connective tissue about the ducts, lobules and acini, with an infiltration by lymphocytes and plasma cells. In localized areas the condition resembles true adenofibroma, except that it is not encapsulated. In long standing cases there may be cysts, isolated fibroma and foci of carcinoma. True adenofibroma may develop on such lesions (Cornil⁶, Theile⁷, Leene and Lenormand⁸, Borst⁹, and Ewing¹⁰). The usual tendency, however, is a progressive fibrosis. Epithelial tumors may develop but are less frequent than in glandular cystic mastitis.

The epithelial changes vary, but there is usually a hyperplasia, rather than an atrophy. A number of the acini and ducts may show a marked overgrowth of epithelium and the lumina of these acini and ducts may be obliterated. When the cells are large, and show hyperchromatic nuclei, the condition is definitely precancerous. Another indication of a precancerous change is an increase in the number of the small alveoli, which are lined by large cells, containing an increase in the chromatin material. Dreyfuss¹¹, and Sasse¹², consider the precancerous change as taking place in the inner row of secreting cells, while MacCarty¹³ locates it in the outer row of cells. Ewing has been unable to recognize these distinctions. From our observations, we are inclined to believe that the change must first take place in the outer row of cells, as they are the first to invade the surrounding tissue. In addition, this is in accord with the normal growth of epithe-

lium, which replaces the desquamated cells by a proliferation from the basal layer, or the case of a duct or gland, from the outer row of cells. In this study we have been especially impressed by the presence of a loose, myxomatous connective tissue, immediately surrounding the acini and ducts in chronic mastitis and in early carcinoma. This zone frequently shows a round cell infiltration. The probability that this zone of loose, edematous tissue destroys the condition of cellular equilibrium between tissue, thus facilitating the breaking down of the basement membrane and the growth of the epithelial cells into the surrounding tissue, has been very forcibly suggested to us.

Cysts are formed from a dilatation of the alveoli or ducts. Due to the proliferation of the epithelium, papillary adenomata are formed and these frequently give rise to adenocarcinoma.

It will be seen that chronic mastitis is a very important predisposing factor in mammary carcinoma. It is also apparent from the histological evidence that many cancers arising in chronic mastitis do not represent wholly new growths, but on the contrary are the natural result of steady increasing epithelial hyperplasia of the normal glandular epithelium (Ewing)¹⁴.

Mixed Tumors of the Breast.—These are tumors composed of more than one element of breast tissue and are of two main groups with several subdivisions. Adenofibroma, or fibroadenoma, depending on whether the glandular or fibrous tissue predominates. Under this head are grouped, (1) Diffuse massive fibroadenoma and (2) Papillary or intracystic fibroadenoma. In the massive fibroadenoma the structure presents varying proportions of stroma and epithelium. The epithelium, however, usually predominates. In another group of fibroadenoma the connective tissue is cellular and either surrounds the acini in broad bands (periecanalicular) or projects into the acini (intracanalicular).

The papillary intracystic fibroadenoma is similar to the cystadenoma found in the ovary. These tumors are fairly common, and give rise to the so called villous, or papillary adenocarcinoma.

The other main group of mixed tumors is the Teratoid tumors which are either of meso-

dermal or ectodermal origin, and consequently have a complex structure.

Carcinoma of the Breast.

Chiefly on anatomical features Ewing¹⁵ considers mammary carcinoma under three heads:

1. Adenocarcinoma, arising chiefly in cysts of ducts or sweat glands.

2. Duct carcinoma, arising from the lining cells of ducts.

3. Acinar Carcinoma, arising from the epithelium of acini. Kauffman¹⁶ classifies carcinoma of the breast as:

1. Solid carcinoma simplex, which may have either a tubular or acinar arrangement (Billroth¹⁷).

2. Solid medullary carcinoma, arising usually from the lining cells of the ducts.

3. Solid scirrhous carcinoma, which he regards as the most common form. He states that these types arise either from the acinar epithelium or the lining of the ducts, and that combinations of these three types are very often seen in the same tumor.

The tissues referred to the Pathological laboratories of St. Thomas Hospital from two hundred and seventy breast cases, during the period from July 1916 to December 31, 1921 forms the basis of this study. The original slides from these cases have been studied and, in addition, in many doubtful or especially interesting cases new slides have been prepared from the gross material. This material has been classified as follows:

Chronic Mastitis.—36 Cases.

18 Cystic.

12 Plain.

5 Tuberculous.

1 With Calcification.

Mixed Tumors.—91 Cases.

2 Adenoma (Sweat gland type).

3 Adenomyxofibroma.

7 Myxofibroadenoma.

16 Cystadenofibroma.

19 Adenofibroma.

6 Fibroma.

4 Papillary cystadenoma.

25 Intracanalicular myxofibroadenoma.

9 Fibroadenoma.

Precancerous and Early Carcinoma.—17 Cases.

3 Intracanalicular fibroadenoma. (1 showing metastasis).

6 Early carcinoma, without metastasis.

1 Adenomyxofibroma, precancerous.

3 Fibroadenoma, precancerous.

1 Early papillary carcinoma.

1 Chronic cystic mastitis, precancerous.

1 Intracanalicular myxofibroadenoma with chronic inflammation. (Precancerous).

1 Early carcinoma with metastasis.

Adenocarcinoma.—49 Cases.

14 Pure adenocarcinoma without metastasis.

5 Pure adenocarcinoma with metastasis.

26 Duct or tubular type without metastasis.

1 Duct or tubular type with metastasis.

1 Papillary with metastasis.

2 Papillary without metastasis.

Medullary Carcinoma.—21 Cases.

14 Without metastasis.

6 With metastasis.

1 Showing mucous.

Mucoid Carcinoma.—2 Cases.

Fibrocarcinoma.—8 Cases.

7 Without metastasis.

1 With metastasis.

Scirrhous Carcinoma.—45 Cases.

33 Without Metastasis.

10 With metastasis.

1 With tuberculosis.

1 Bilateral in male.

Carcino-Sarcoma.—1 Case.

From an analysis of this material, it was found that a little over 52% (141 cases) of the breast tumors examined showed malignancy. Of this number 18% (26 cases) showed metastasis to the axillary lymph glands. Ninety-six per cent (134 cases) of the malignant tumors showed the presence of chronic inflammation. In a recent article on the prevention of cancer, Coplin¹⁸ emphasizes the fact that injury, inflammation and irritation are important factors in causation. He reviews rather extensively the literature of the so-called occupational tumors.

In view of the large amount of work recently done on protein sensitization, it is not surprising that some writers¹⁹ have advanced the theory that carcinoma probably results from some form of protein intoxication. This view is not without a certain amount of support. Bulkley²⁰ has long been known as the champion of the constitutional, in contradistinction to the local nature of all forms of carcinoma.

Conclusions.

1. Of the breast tumors examined 52% (141 cases) showed malignancy. Of this number

18% (26 cases) showed involvement of the axillary lymph glands.

2. Of the two largest groups of carcinoma, the adenocarcinomas showed metastasis in 7 cases out of 49. The schirrous carcinoma showed metastasis in 10 cases out of 45.

3. In one case carcinoma and tuberculosis were present in the same breast.

4. In one case schirrous carcinoma involved both breasts in a male.

5. Ninety-six per cent (134 cases) of the malignant tumors showed the presence of chronic inflammation.

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CHRONIC HYPERPLASTIC TUBERCULOSIS OF THE INTESTINE.*

W. C. Dixon, M. D., F. A. C. S.

TUBERCULOSIS involving the intestinal tract may be classed in one of four groups:

(1) The ulcerative type of tuberculosis enteritis, which occurs as a primary infection in children, and as a secondary infection in advanced cases of pulmonary tuberculosis, with a frequency variously estimated from 50% to 90% of cases.

This group has not ordinarily been considered as suitable for surgical treatment, but Archibald¹, reporting a series of cases, most of which had been referred to him by Brown and Baldwin of Saranac Lake, concludes that many of this type can be greatly benefited by operation; resection when possible or side tracking anastomosis when resection is contra-indicated. He believes that the primary point of infection is in the cecum and that the

disease spreads both up and down the bowel. He has observed this to occur in two cases which were reported on six months after a first operation.

(2) The second type, the cicatricial or stenosing type represents the end result of a completely healed ulcer, usually in the small intestine, manifesting itself by obstruction.

(3) The third type is the enteroperitoneal. This form affects the cecum and adjoining ileum, and in the words of Hartman², who was among the earliest to call attention to this condition, "The whole of the ileocecal region is lost in a mass of adhesions, interspersed with caseous matter and even purulent tuberculous cavities, communicating sometimes with the intestinal tract."

(4) The fourth group, the hyperplastic type, involves most often the cecum, sometimes the ileum or the flexures of the colon or the rectum. It is to the latter two types that I desire to direct your attention.

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, May 9, 1922.

Three cases of this condition have come under my observation, brief reports of which are as follows:

CASE 1.

R. W.—Age, 26; colored; female; married. Admitted June 16, 1916.

Complaint: Pain in right side of abdomen.

Family History: Mother died following abortion; father living and well; one brother living and well; several brothers died in infancy; one sister living and well; several sisters died in infancy; no tuberculosis or cancer in family.

Past History: Ordinary diseases of childhood; two months was in Vanderbilt Hospital, complaining of pain in abdomen and back, but left after a short stay much improved; menstruation began at fifteen years, always regular and normal until birth of child eighteen months ago; since then has only menstruated once; has three children living, three dead, and one miscarriage.

Present Illness: Patient came to the hospital complaining of pain in the right side of the abdomen, low down. Yesterday (June 14, 1916) she was seized with pain in the right lower quadrant, which was only relieved by morphia. She vomited, was chilly, and thinks she had some fever. Since then she has had soreness in the abdomen, more marked on the right side. She had her first attack similar to this eighteen months ago, and since then she has had a number of these spells. She is weak and has lost some weight.

PHYSICAL EXAMINATION.

Patient is a rather poorly nourished negro woman twenty-six years of age. There is no oedema or jaundice. Pupils, equal in size and react to light and distance. There is no strabismus, nystagmus, or exophthalmos. Teeth show some pyorrhoëa. Mucous membranes, pale. Throat, negative.

Heart: P. M. I. not seen. No thrill. Outline, normal. No accentuation. No murmurs heard. Arteries, not sclerosed. Pulse, equal on both sides, regular, and synchronous with the heart beat.

Lungs: Expansion equal on both sides. Vocal and tactile fremitus, normal. Percussion shows normal resonance. Air enters all parts of both lungs. No rales.

Abdomen: Symmetrical in outline. Soft.

No organs or tumor felt. Patient complains of pain on palpating the right lower quadrant. No rigidity.

Inguinal, epitrochlear, and cervical glands palpable. Skin and joints negative. Knee jerks respond normally. No Babinski or ankle clonus.

Vaginal examination: Moderate perineal tear. Cervix, torn. Uterus, retrodisplaced and fixed. Tenderness in fornices, but no mass. Leucorrheal discharge.

Urine: Amber. Sp. Gr. 1020. Reaction acid. Sugar negative. Albumen negative. Microscopic examination negative.

WBC., 7,000. Hemoglobin, 75 per cent.

Wasserman. Negative.

"X-ray examination of the alimentary tract showed a large six-hour retention in the stomach. The cecum was dilated, and above it was a narrowing of the colon.

Operation: June 22, 1916. A medium incision was made. Examination of the pelvic viscera showed some adhesions and a retrodisplacement. The cecum was found dilated, and in the ascending colon near the hepatic flexure was a mass, approximately two inches long, surrounding the entire lumen of the bowel. It produced so much narrowing that the finger could not pass through. There were many enlarged glands near the mass and in the mesentery of the small intestine, as much as a foot or eighteen inches from the ileocecal valve. The mass and the glands were hard and nodular. The peritoneum was normal. A gland was removed for examination. Thinking the condition to be malignant and too extensive for resection, I did a lateral anastomosis between the ileum and the transverse colon beyond the mass. In spite of the six hours' retention, the stomach and duodenum were both normal. The patient made an uneventful recovery.

Source of Specimen: Gland of mesentery.

Time removed: June 22, 1916.

Gross Pathology: A small lymph gland about 7 mm. long

Microscopic Pathology: Section shows lymphoid tissue, which is infiltrated with round cells, plasma cells, and fibroblasts. The fibrous tissue of the gland capsule is thickened. There are some small areas of necrosis and many giant cells.

Diagnosis: Tuberculous lymph gland.

Sept. 18th, 1916 a report from the patient says she feels well, is able to do her work, and has gained considerable weight. I do not know her condition since then.

If it had been known at the time of operation that this was a tuberculous process, resection would have been the procedure indicated. Believing it to be malignant, resection was out of the question on account of the extensive glandular involvement.

CASE II.

Name. H. H. H.

Age. 34. Sex—M.

Came for relief of distension of abdomen. Pain on right side of abdomen.

Present History: Patient's present trouble began one and one half years ago with slight soreness and tenderness in right lower abdomen at about the area of McBurney's point. This condition has occurred since that time at short intervals. It lasts one or two days and then disappears. For the same length of time (1½ years) patient has suffered with a chronic diarrhoea most of the time accompanied by some colic and with mucus and blood of a dark color mixed with the feces. This condition has been fairly well controlled by the use of bismuth and paregoric, but until the last month or two has recurred frequently. In March 1920 his abdomen began to enlarge which was thought to be due to fluid. This has gradually increased until the present time causing no trouble except from weight and when leaning over. Has lost some weight since illness began but is above average weight. Appetite excellent. Digestion fair (some gastric discomfort and heaviness at times.) Has diarrhoea, about two liquid actions a day with blood and mucus occasionally. Two years ago he had some cough that had little associated sputum. This, however, contained tubercle bacilli. He was treated in a sanitarium for a number of months and was thought to be an arrested case. Night sweats off and on for two weeks and afternoon temperature during the summer. None of these symptoms now. At the beginning of his illness he was hoarse for a time, but no disease of his larynx was found.

Past History: Measles, mumps, whooping cough and chicken pox during childhood. Pneumonia 22 years ago with no complica-

tions. Influenza two years ago followed by present trouble.

Family History: Negative to T. B., cardio-nephritic disease and cancer.

It was thought that this man had tubercular peritonitis and that he probably had some free fluid. Operation was undertaken on this account. As his pain and tenderness was in the appendix region, a right rectus incision was made. No free fluid was found. The structures in the ileo-cecal region were found matted together in a mass by adhesions so that no differentiation of ileum, cecum or appendix could be made. The whole mass was densely adherent to the posterior abdominal wall, and it was impossible to deliver it into wound. The hazard of doing anything in the way of radical surgery seemed so great that I did not feel justified in proceeding any further and the wound was closed.

The patient had a smooth convalescence from the operation, and since then has improved very much. He was seen recently when he was at his top weight, without cough or fever, and without abdominal symptoms.

CASE III.

C. A. McN. Male. White. Age 27.

Traveling Salesman.

Complaint— Attacks of abdominal colic. Indigestion.

F. H. Negative.

P. H. Ordinary diseases of childhood. Hemorrhoid operation some years ago.

P. I. Since he was 12 years old he has had attacks of colic. For the past two years these attacks have been worse. Vomiting or taking soda will relieve the attacks. When he has the colic the pain is at first epigastric, later localized in right lower quadrant.

Recently, he says at times he can feel a mass or fullness in his right side. He has reduced his diet largely to liquids and this has reduced the frequency of his attacks. He has lost some weight.

Urinalysis: Negative.

Physical Examination: Negative except for tenderness in right lower quadrant. No mass could be felt.

Operation: Showed a hard mass in the cecum, surrounding its entire lumen. There was considerable fatty tissue over the mass. The appendix was short and thick. The ter-

terminal ileum was greatly dilated. There were some enlarged glands in the meso-colon. Six inches of ileum, the appendix and cecum were removed, the ends of the bowel closed, and a side to side anastomosis between the ileum and transverse colon made.

Pathological Report: Gross specimen consists of about 6 inches of the cecum and the same amount of the ileum, including the appendix. The appendix has been opened and shows a very granular mucosa, which is apparently congested. In the region of the ileocecal valve there has been several hyperemic slightly elevated areas on the mucosa.

Microscopic: Sections of the cecum show numerous typical tubercles which are composed of round cells, epithelioid and giant cells.

These tubercles are seen both on the mucosa, in the musculature and on the serosa of the gut. A number of pus cells are seen to be infiltrating the gut, as well as a number of plasma cells and large mononuclear wandering cells. No evidence of malignancy is observed.

Diagnosis: Tuberculosis of the cecum.

The patient made a quick recovery and went home at the end of two weeks. He gained weight and strength and when seen recently was well.

This condition is most common between 20 and 40 years, a point of some value in differentiating it from cancer, with which it may be easily confused clinically.

The question of whether the cecal disease is primary or secondary is apparently not settled, as different views are expressed on this point. Cases are reported in which no other tubercular focus could be found. Cumston believes that the hypertrophic form of tuberculosis of the cecum is primary, and even goes so far as to say that if in such a case tuberculosis of the lungs is found, it is secondary to the focus in the cecum.

The mode of infection may be indirect where the bacilli are carried to the cecum by the blood or lymphatics from a focus elsewhere, or direct where the infection occurs through the mucosa.

Localization in the cecum is favored by the frequency of inflammatory lesions here, and also by the mechanical factors brought about by the slowing of the fecal current at this

point together with slight trauma to the mucous membrane due to stasis.

Hemmeter³, however, mentions the fact that tubercle bacilli can pass through the intestinal mucosa in the absence of any traumatism. That this region is particularly prone to tuberculous infection is shown by Hartman's statement that in 85% of all intestinal tuberculosis the ileo-cecal region is affected. In 9% of the cases, this region alone is involved.

Of the two types with tumor formation, the entero-peritoneal and the hyperplastic, the entero-peritoneal is usually associated with an active tubercular lesion, while the hyperplastic is not. The only difference between these two must be dependent on the difference in virulence and in amount of the infecting organism, and in the tissue reaction to the infection.

In the entero-peritoneal type ulceration beginning on the mucosa, is present, the ileum also being involved. The neighboring glands are affected, and dense adhesions are formed between the mass and adjoining structures. The ulceration may proceed to perforation, with abscess formation, and eventually the discharge of the pus externally in the right iliac region, at the umbilicus or even in the lumbar region. The pus may gravitate to the pelvis and present there.

Sometimes the ulcerative process may form an opening from the involved area, into some other portion of the bowel, creating a spontaneous entero-anastomosis.

That the local process in the bowel should be more destructive when an active lesion elsewhere in the body is lowering the general resistance is but a natural consequence.

In the hyperplastic form, the essential pathological change consists in a thickening of all the coats of the intestine, this thickening being particularly marked in the submucous and subserous coats due to a large increase of the fibrous tissue. This increase of the fibrous tissue is usually well marked, and because of this some authors have expressed doubt as to the tubercular nature of the process. It has been pointed out, however, that in certain types of lupus a similar fibrous tissue formation occurs. They both represent a strong effort at repair in a localized infection of comparatively low virulence.

The appendix may not be involved but is usually caught in adhesions. The mucosa is thickened and frequently has polypoid projections from its surface. Ulcers are rarely found. Scattered tubercles can be recognized throughout the coats of the bowel. The peritoneum is thickened and red, and adjoining lymph nodes are usually involved.

Considerable deposits of fat occur over the involved bowel, sometimes forming an almost complete covering. This is another expression of nature's effort at repair, and has been compared to the sclerosed fatty tissue found at times around a tuberculous kidney.

A sharp dividing line cannot always be drawn between these groups, as one may merge into another.

The symptoms of this condition fall largely under two heads, disturbance of intestinal function or abdominal pain. Dependent largely on the amount of ulceration present, diarrhoea may be the presenting symptoms. It may alternate with constipation. Blood and mucus may be present in the stools at times.

The pain may be a general abdominal discomfort, with soreness and tenderness in the right side.

As the disease progresses, colic usually occurs, which increases in severity and is felt with greatest intensity in the right lower quadrant.

Examination frequently shows the presence of a tumor, which is not very tender, and in the hyperplastic type is usually moveable. In the three cases reported, however, no tumor could be felt. X-ray examination is of great value in the diagnosis, showing a filling defect, or in the cases with ulceration, as pointed out by Brown⁵ and Pirie⁶, an inability to fill the cecum with the barium mixture due to the irritability of the bowel. Many cases are only diagnosed by the pathologist.

It is important to remember that while this condition is comparatively rare, it does occur, and given a case with a tumor of the cecum and enlargement of the mesenteric gland, carcinoma is not the only possibility.

No doubt many cases have been refused resection on the basis that with such extensive glandular involvement in carcinoma, resection would be useless. In suitable cases the ideal treatment consists in resection of the involved

portion of the bowel, with an ileo-colostomy uniting the ileum and the transverse colon. Whether or not this can be done depends on the patient's general condition, the extent of the local pathology, and the character and extent of the complicating adhesions. Ileo-colostomy without resection, a short circuiting of the bowel around the diseased area, is advocated by Wiener⁷ who reports several cases where this gave complete relief of symptoms. Where resection is not possible this is a valuable procedure but primary removal of the disease process is more desirable than a palliative procedure which leaves the pathology behind. This procedure was employed in my first case, under a misapprehension as to the pathology present.

Unilateral or bilateral exclusion of the intestine can also be employed, and Cumston⁴ refers to a number of cases where bilateral exclusion was done with good results. It is, however, the obvious disadvantage of a discharging fistula. The formation of an artificial anus can only be considered as a last resort in desperate cases, and since Wiener⁷ says that 83% of cases where this is done die, it has a field of usefulness so small as to almost put it out of consideration.

Cases I and III were typical cases of the hyperplastic form of tuberculosis of the cecum.

Case II is classed as belonging to the enteroperitoneal group on the basis of his tubercular history, the operative findings, and the subsequent history, although we have no tissue examination to support this diagnosis.

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DIAGNOSIS AND MANAGEMENT OF THE PYLORIC STENOSIS OF INFANCY.*

Eugene Rosamond, A. B., M., D. Memphis.

IN HYPERTROPHIC pyloric stenosis we have a disease entity which causes loss of infant life through lack of recognition, yet which has an almost pathognomonic symptom complex, and which yields to either of two therapeutic measures, one surgical and the other medical.

The important thing about this condition then is its early recognition. The next most important thing is the choice of treatments, knowing when to advise operation and when dietetic treatment. This I do not know, and it is the purpose of this paper to promote discussion of this point.

Ordinarily the diagnosis of pyloric stenosis is not difficult. It occurs in boys oftener than in girls in the ratio of 8 to 1. This relation has not been explained. It is most frequently met with in breast-fed infants because it occurs in the first month of life, though frequently the doctor is not consulted until after the child is on the bottle and after he has run the gamut of all the proprietary foods and milks of the formula of all the neighbors.

The baby is usually a vigorous, normal child at birth and gains in weight. Then one day toward the latter part of the first month the baby suddenly vomits. This is abrupt enough that the mother can practically always name the exact date.

The vomiting is, or will become, forcible and projectile—sometimes the vomitus being thrown out of bed and onto the floor. It occurs while the baby is still nursing, or shortly after he has finished. Later in the course of the disease the vomiting occurs with every act of nursing. One or more feedings may be retained throughout the day, but sooner or later the baby vomits "more than he takes."

And now we come to the most important circumstance in the feeding history, because it

is the cause of practically all failures to diagnose the condition. A change of food—no matter what food—will frequently cause an abatement of symptoms for a while. The new formula or the new doctor has proved to those concerned that it is simply the food that disagrees, and so the case runs on its way of slow starvation.

The other symptoms are explained by the starvation. There is loss of weight, constipation, stools small and dark with no evidence of milk digestion, and scanty urine.

If the child is fed and given a pacifier to suck, his abdomen bared and watched for a sufficiently long time, the (almost) pathognomonic sign of pyloric stenosis will be observed—i. e., gastric peristalsis.

These peristaltic waves have been compared to miniature balloons, the size of a small egg. They appear under the left border of the ribs, bulge up in the epigastrium and slowly move across to the right. The second wave appears before the first is gone, and they are banded between each other like balls on a string. They grow larger and more active just before the projectile vomiting occurs.

If now a test meal is given, measured, and three or four hours later withdrawn by means of a suction apparatus, or if a barium meal is given and x-ray plates taken, it will be found that very little food has passed the pylorus.

Also if care and patience is taken there may in cases be found a small movable tumor, the size of an olive. The presence of this tumor means a true hypertrophy—it's absence means we probably felt in the wrong place.

These then are the symptoms of pyloric stenosis:

1st. By the history alone we are usually able to make a tentative diagnosis. The normal baby, a few weeks of progress, the sudden vomiting, the continuance of this symptom

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until the child is weaned, and then the gamut of the proprietary foods—still with vomiting, emaciation, hunger and constipation.

2nd. The Age Incidence. Wall has said, "The second half of the first month of life. There is no disease in the category of human ills which possesses an age period as exact and suggestive as pyloric stenosis."

3rd. Gastric Peristalsis. These waves of peristalsis may be due to causes other than hypertrophy causing a pyloric block, but they are for all practical purposes pathognomonic of this condition.

4th. Tumor. Absence of tumor does not mean anything, its presence means hypertrophy.

5th. Gastric Retention. I cannot see why such importance is given this symptom, except that we are all slaves of precedent, and it looks as if we had worked our case up better if we x-ray them or give a measured feeding and later withdraw it.

The x-ray gives us information of value.

The duodenal catheter seems to me to be truly "Germanic" in its usefulness, i. e.,—the hardest and most complicated way to reach a conclusion.

There are two other conditions that might be confounded with stenosis of the pylorus:

(a) The hypertonic infant.

(b) Pylorospasm.

The hypertonic infant belongs to the spasmophilic group. He has hypertonicity of all the skeletal muscles, and he vomits, cries, is constipated, has sub-normal temperature and emaciation. The vomiting is with difficulty controlled dietetically. But atropine is a specific for this type of vomiting. Sometimes after the first dose the vomiting stops and the infant changes from a fretful, crying, vomiting child into a normal one.

Pylorospasm is also controlled by atropine. This is best given in a 1-1000 solution and in drop doses, increased until the full physiological effect is produced.

In the drug belladonna then we have a therapeutic test that will differentiate hypertrophy of the pylorus from all spasmodic affections with which it may be confounded.

Thirteen years ago I reported to the Arkansas State Medical Association a group of five cases of pyloric stenosis that I had treated

by means of stomach washings and fractional feeding. Two of these cases died.

This experience with the best dietetic treatment convinced me that all cases should go to operation at the earliest possible moment. This I recommend in the next eight cases under my care. Six recovered, one died after operation and one died fifteen minutes before operation.

I shall not go into the history or the technic of the modern operation of pyloroplasty. It is popularly called the Rammstedt operation, though Fredet preceded him as also Strauss of Chicago. Dr. Downes of N. Y. has popularized the simple incision method, and the operation is so easily done, is accomplished by so little shock and is done so quickly that it seems we would perhaps be justified in urging immediate operation for this group of patients. The most striking thing about surgical procedure is the fact that a starving, crying invalid child is converted in two or three days time into a comfortable one on the high-road to happy healthfulness.

The mortality of the operation is from 8% to 20%.

In the Archives of Pediatrics, July 1918, Sauer of Chicago reports the first use of thick cereal feeding as a therapeutic measure in cases of undoubted hypertrophic stenosis. In the words of Sauer, "In all but 1 case the effect of the thick farina feeding was striking. In 11 of the 12 cases the vomiting soon stopped, although in most of the cases the peristaltic waves and the tumor (where palpable) persisted for weeks or months after the vomiting ceased. 11 of the 12 cases are now in excellent health, the remaining one dying of broncho-pneumonia 8 weeks after the vomiting ceased. Of the 12 cases all but 2 were on the breast when the vomiting began. 11 of the infants were taken care of in the homes—six by the mother without any trained assistance. 9 of the cases occurred in boys and 3 in girls." Porter has since reported 10 cases so treated with 10 recoveries. Others have reported similar results. Sedgwick reports 68 cases. 64 were treated medically without a single death, while of four cases treated surgically 2 died.

The thick cereal feedings are prepared with skimmed milk and water, thickened with far-

ina, cream of wheat or rice flour and sugar added. For example a formula would be:

Skimmed milk ----- 5 ozs.
Water ----- 15 ozs.
Cream of Wheat ----- 4 tablespoonfuls
Dextri-Maltose ----- 1 tablespoonful

Make up 16 ozs. of food; boil for 1 hour in a double boiler; feed $2\frac{1}{2}$ ozs. every 4 hours. A simple formula I have used is to stir condensed milk into well cooked cream of wheat in suitable proportions.

The thick food is given with a spoon, or as Porter recommends through a Hygeia nipple with the end slit open. It should be thick enough not to fall off a spoon—not a thin gruel.

Whether it is by inhibiting the pyloric reflex through its colloidal quality that the thick colloidal quality that the thick cereal acts, or whether some other explanation will be found I do not know. Certain it is that it acts—promptly, strikingly, almost miraculously.

So that now we have 2 therapeutic measures, both of them effective, one a simple surgical procedure, the other a simple diet. Which in a given case shall we choose?

Sedgewick declares that he believes out of 100 cases treated surgically and a like number treated medically that there would be more medical cures than surgical ones. But the medical cure takes longer and is sometimes rather tiresome. What the future holds for these patients we can only surmise.

In the past year I have had two cases in St. Joseph's Hospital. In both of these there were palpable tumors and both had long been treated for indigestion. Both were put on thick cereal feedings, the vomiting stopped, yellow stools appeared, the dehydrated tissues were filled out and when each had made a substantial gain in weight they were operated upon by the Rammstedt method and made uneventful recoveries.

The post-operative procedure was simple. The first two or three feedings were 5% lactose solutions and then breast milk was added in the proportions of half and half. The first feeding was given as soon as the child was thoroughly awake from the anesthetic. Both babies are still doing well.

The last case I saw was diagnosed early, was in splendid condition for operation, and after

x-ray confirmation of the diagnosis was carefully built up with cereal feeding, i. e., condensed milk and cream of wheat cooked with skimmed cow's milk and water. The baby was operated upon at the Baptist Hospital by an experienced surgeon and the operation was both skillful and thorough. The tumor was incised throughout its full length and the mucous membrane pouted up into the incision as it should do. I have seen many of these operations and I felt this was properly done and would give prompt relief. The after care was carefully supervised. Yet this baby died suddenly after 48 hours. Whether death was due to rupture of the mucous membrane or other cause I do not know as autopsy was refused. But I feel this baby could have been saved by better judgement in the choice of methods. And the decision was mine. So that where once I felt the proper course of treatment was to prepare them for the surgeon by feeding thick cereals until we had restored the turgor and stopped the weight loss, I now wonder what the future may hold for these babies if we play safe and continue them as medical cases.

I feel there is some happy division of cases, some method we may devise to determine which are medical and which surgical cases. I consider the condition as essentially a surgical one.

DISCUSSION.

DR. O. H. WILSON, Nashville.—After thanking Dr. Rosamond for his excellent paper, I would like to remark that in my opinion the feeling of the tumor is not necessary for a diagnosis. Personally, I have rarely been able to feel the tumor. The essayist says that the mortality varies according to the operator. I believe it varies more according to the time of operation, and the condition of the child when sent to the operating room.

Dehydration necessarily makes a poor surgical risk, and it behooves us under all circumstances to have plenty of fluid in the system before surgery is undertaken.

An impressive point in the history of these cases is that symptoms begin in the third week. So far no satisfactory explanation has been offered for the delay. Anyone who has seen the cartilaginous hardness of the pylorus can't believe that this overgrowth has arisen from a spasm of muscle for only three weeks. It is beyond doubt a congenital condition, then why are symptoms not seen at birth? Thompson of Edinburgh says that the symptoms are produced when the growth of the tumor causes stretching of the peritoneum.

Of course it is only a theory, but I would like to suggest this one, that during the early days of his life the mother is at the hospital or in bed with every attention. She has nothing to do except make satisfactory milk. When she goes home, or when she begins to take upon herself household duties, and the care of the infant, she becomes nervous and her milk is affected, chiefly from the nervous strain. Sometime between three and eight weeks nearly all babies show the effects of this, either by colic or diarrhoea. If the pylorus happens to be hypertrophied, then symptoms begin as a spasm of the overgrown muscle. Thus we see that while everything is normal, the hypertrophied muscle gives no symptoms, but when milk becomes the slightest bit irritating it is thrown into spasm, and obstructing symptoms result.

This seems to be the most natural explanation, and I am sure obstetricians will bear me out in the observation that most babies show some digestive symptoms about the period of three to eight weeks, due to a large extent to the nervous strain upon the mother.

DR. OLIVER W. HILL, Knoxville.—Dr. Rosamond's position of taking a half-way ground as to whether it is better to wait or to operate is well taken. I believe if we study our cases we can come to some conclusion as to whether to operate or to wait.

Dr. Wilson has contended that he has not been able to find a tumor. That has not been my experience. By the use of the fluoroscope with barium, I have been able to find a tumor in the majority of cases. I have been able to feel it distinctly. It takes time to do it sometimes, and you have to watch the baby carefully at different intervals. If a tumor is there, there is no reason why we should not find it, taking into consideration the size of the tumor and the thickness of the abdominal wall.

With reference to dehydration, you can give the infant as much fluid as you can by mouth, giving it intraperitoneally or by Murphy drip, if necessary. Preferably it should be given intraperitoneally, as it is much more rapidly taken up. In the next place, a slow surgeon may inflict a large amount of traumatism. Incidentally, traumatism sometimes does not do so much damage. I recall one case that was operated on by a distinguished surgeon who is present at this time. On the third day he saw blood on the dressings; on removing them, found everything out. The child was markedly shocked. The viscera were put back, the incision closed and the child never had another symptom.

Another thing: You should keep the baby warm and avoid shock while on the operating table. His metabolism is on a strain and he needs extra heat to carry him through. Give as small an amount of the anesthetic as you can.

On removing the patient from the operating room start the Murphy drip. If you have given intraperitoneally, normal saline or sterile water, keep the

baby warm while administering. Do not disturb him if possible.

I do not believe we should begin feeding too early. Six or seven hours is a happy medium. Give as small amount of milk as the baby can tolerate, because you may have proteid toxins elaborated there and trouble ensue.

As to the end results following operation for pyloric stenosis, according to the work of Schultz, Downes, and our local men the results are reasonably good.

Our results have been good in most cases. In one of my cases the child on the fourth day exhibited a temperature which I could not explain at the time until it developed otitis media. Both ears were involved and a double paracentesis was done, and the child improved from that time on. However, it developed a hernia as big as a fist, and in closing the hernia it developed a temperature which lasted for three days and then the child died.

DR. FRANK D. SMYTHE, Memphis.—I regret that I will be unable to exhibit the slides at this time. Description of the technique of the Ramstedt operation and subsequent gastroenterostomy which was performed upon the child.

I never see a case of pyloric obstruction that has not been under the treatment of the general practitioner for some time. Generally a pediatrician has been called in and a diagnosis of pyloric obstruction has been made. The little patients as a rule are emaciated; many of them to an extreme degree when the surgeon is called.

Medical treatment is justifiable so long as the obstruction is not sufficient to interfere with adequate nutrition of the infant; a given case however pursuing a downward course should be referred to a surgeon without delay, as there is nothing to be gained by subjecting the infant to avoidable danger of starvation. Generally speaking these patients are treated medically, with frequent change of diet before a correct diagnosis is made, consequently the vitality is seriously impaired, and they are not ideal surgical risks. We get these cases too late.

In a hospital for children, if the hospital is in charge of a pediatrician, a diagnosis is made much earlier, the surgeon is called at once and early operation is done, with a greatly lessened mortality.

Dr. Downes has operated on more cases of congenital hypertrophic-stenosis of the pylorus than any surgeon. He is associated in hospital work where babies are cared for under the direction and supervision of Dr. Holt. Dr. Holt appreciates the fact that his little patients have a better chance for recovery when operation is performed early, or before they have become exhausted from starvation.

Until three or four years ago mortality following the Ramstedt operation was twenty-three per cent. In Downes last series of cases his mortality was five per cent, due to the fact that the cases were referred to him when the patients were in fairly good physical condition.

If the pylorus is not sufficiently obstructed to interfere with proper nutrition, the case is not a case for operation. A pediatrician is best prepared to conduct the treatment and feeding of such cases.

The little fellow which Dr. Rosamond has just shown you presented an unusual and interesting condition. It is the only case to date where a Ramstedt operation has been performed which failed to relieve the obstruction of the pylorus, where a gastro-enterostomy was performed seventy-six hours later, which resulted in saving the patient's life. I am sorry that I am unable to show you the picture of the baby taken prior to operation as the degree of emaciation present cannot be described.

The gastro-enterostomy required eighteen minutes, a very small amount of ether was required to anesthetize the child. Dr. Rosamond conducted the after treatment so far as the feeding was concerned. We watched him very closely after the operation, that is after the Ramstedt operation and also after the gastro-enterostomy. Forty minutes after the gastro-enterostomy was performed administration of nourishment by mouth was begun, and was given at hour intervals. At the nineteenth hour the child vomited for the first time. The stomach was washed out immediately and not another untoward symptom was experienced.

In most instances the mortality of the operation of pyloric stenosis by the Ramstedt method depends largely upon the condition of the patient at the time of the operation, and that will depend largely upon the length of the time the patient is permitted to go before the obstruction is relieved by operation.

This is the only case on record where a gastro-enterostomy was performed following a Ramstedt which had failed within three days. Since the patient recovered I cannot conceive of a case due to obstruction only, that should be denied the chance for recovery offered by a gastro-enterostomy where a Ramstedt had been performed and had failed to relieve the obstruction.

DR. EUGENE ROSAMOND, Memphis (closing): I should like to say that Dr. Wilson misunderstood me. In my paper I stated that the presence of a tumor meant we have a true hypertrophy; that the absence of a tumor meant we might have felt in the wrong place—it means nothing. Its presence, however, meant we had a hypertrophic pyloric stenosis.

His explanation as to the etiology of this condition is one of the best I have heard. I have nothing further to say.

THE STANDARDIZATION OF INFANT FEEDING.*

OWEN W. WILSON, M. D., NASHVILLE.

THE purpose of this paper is to attempt to analyze and to correlate the feeding systems of various authors, to take stock, as it were, of the feeding tendencies of the times.

While everyone appreciates that each baby is a rule unto himself, and should have his food adaptation to suit his peculiar digestive powers, the subject can not be dismissed so summarily. It is necessary to outline rules by which average normal babies should be fed carefully watching for symptoms of special intolerance.

For the purpose of this study, twenty-five recent authorities have been selected, and their methods studied in detail.

To be satisfactory, the first requirement of any method of feeding is simplicity—for the sake of the mother who prepares the food, as well as for the one who directs it. There should be no long formulae to be memorized, and preferably no need for a reference table. The many diverse, complicated, methods drive the practitioner to patent foods, or to some other form of drink.

THE CALORIC METHOD.

This is now recommended by no one as a method of feeding, but is quite valuable as a means of checking up the quantity given—a protection against either over- or under-feeding.

THE PERCENTAGE METHOD.

This valuable method has done much for scientific infant feeding, and is given by

*Read before the Tennessee State Medical Association at Memphis, April 11-13, 1922.

the majority of text books today. It is, strictly speaking, not a method of feeding, as it merely states the amount of food in definite quantities, and any kind of feeding may be expressed in percentages.

It has the advantage of uniformity of teaching. In the last analysis, even though the formulae are made with mathematic exactness, their correctness depend upon a varying strength of the cow's milk or the cream layer, and probably inaccurate measurements of the mother or nurse.

The Percentage Method, however, has been of great value in teaching us to regard milk as a mixture of five elements, to balance a ration, and intelligently to interpret the symptoms of a distorted digestion.

Its chief disadvantage, especially in the hands of a novice, (and they feed most of the healthy babies,) is that there is an irresistible tendency to imitate the formula of human milk, causing a disregard for fats, a fear of protein, and a constant 7% sugar under all conditions.

SIMPLE MILK DILUTION.

Simple milk dilution is rapidly gaining ground as the choice procedure, and while theoretically unsatisfactory, it seems to give results, and directions are so easily followed that it is gratifying to all concerned.

PROTEIN.

The fear of protein was the dominant feature of feeding thirty years ago. All forms of curdy stools were considered of protein origin, and varied indeed were the methods suggested to relieve this seemingly insuperable defect in cow's milk.

I mention only a few—great dilution of even centrifugal cream, cereal gruels, dextrinized gruels, citration, alkalies and peptonization.

A wholesome respect for protein is shown by many modern writers, as Kerley, Still, Graham, Chapin and Pizek. Truby King suggests that high protein feeding may, by kidney irritation, cause subsequent nephritis, but he has no other than theoretic grounds for this conjecture.

Holt, Morse, Demmett, Julius Hess, Porter and many others have seen the error of their way, and admit at least that protein does not

cause the many symptoms once attributed to it, and is comparatively innocuous.

Protein is probably the most easily digested element not the most difficult. Yet the fear of protein has delayed the development of scientific infant feeding immeasurably.

FATS.

The difficulty with fats was soon apparent when the attempt to imitate the formula of human milk was the ideal, and there is now a constant tendency to use a lower percentage. Morse and others say that 3 or 3½% should be the fat limit, though 4% is still used by many authorities even in the early months.

No procedure has ever been successful in making fats more digestible. Homogenization has failed. The substitution of cod liver oil, olive oil, bean fat, cocoa butter or oil has failed. The only successful method to reduce the amount and supply the deficient calories in other ways, usually by added sugar.

It is interesting to watch Holt climb down from the high fat pinnacle of his early editions, advising dilutions of 16 or 20% cream, to his present position of giving whole milk dilutions preference.

SUGARS.

Percentage feeders as a rule regard sugar with indifference. The reputed constancy of 7% milk sugar in human milk leaves little room for discussion, and enough is always added to make a 7% mixture—the opportunities for digestive disorder from this amount being considered negligible.

Of twenty-five authors investigated, sixteen use milk sugar routinely. Its chief claim for preference being that it is the form found in human milk, that it favors the growth of normal intestinal flora, and other theoretic reasons.

We should remember that the added sugar is to be used with a mixture of cow's fats, and that the same digestive reaction could hardly be expected.

Malt sugar is routinely used by only one—Grulee, though everyone recognizes its value in difficult feeders, and advise a change to malt sugar if there is failure to gain with other forms.

As to the amount of sugar percentage feed-

ers invariably advise added sugar to make about 7% at any age. J. Hess says 1/10 of an ounce for each pound of weight, with a limit of 1½ ounces.

Maltose is more readily assimilated and may be used to the extent of 1/8 ounce per lb. The simple rule of allowing one ounce of added sugar under four months, and 1½ ounces over four months seems to stand the test of practically all.

In the opinion of the writer, too little attention is paid to sugar. It is the only one of the food elements we can qualitatively modify, and success or failure hangs often upon its correct use. Far too little stress is laid upon digestive disorders due to exceeded sugar tolerance.

It may be only true locally, but the writer believes that the large majority of the digestive disturbances calling for paediatric assistance is due to sugar.

Specialists feed comparatively few normal babies. They usually come with a history of patent food feedings. The patent end is always sugar and plenty of it. It is the only food element in excess.

SALTS.

Despite the exhaustive investigations of Bosworth and others, our working knowledge of salts is as chaotic as of old. The only settled facts are that there is a deficiency of iron, and that there is plenty of calcium; no need of adding lime water to make teeth.

ALKALIES.

The use of an alkali was at first empirical. Human milk was supposed to be alkaline and cow's milk acid. Soon it was suggested that the alkali rendered the protein curd smaller and less tough.

5% lime water is routinely added by the majority of authors. A few still follow Poynton and use Citrate or bi-carbonate of soda.

Morse, Dunn, Thompson, Dennett, Grulee, Chapin and Pizek and Wachenheim claim that the routine use of an alkali is unnecessary, and have seen no symptoms even when it is suddenly withdrawn.

The only indication for an alkali is in vomiting babies when lime water to the extent of ¼ or ½ the feeding is advised.

DILUENT.

Water is almost the only diluent advised routinely. Still and Truby King prefer whey. Cereal waters are advised by some, first to reduce size and consistancy of curd. 2nd to act as a laxative. 3rd to make a weak mixture more satisfying.

24-HOUR QUANTITY.

The maximum daily quantity varies from thirty-two to forty-eight ounces, with a tendency toward the lower limit. J. Hess allows 1½ ounces per pound of weight, but may increase to 2½ in underweight babies.

QUANTITY OF EACH FEEDING.

It is certain that a baby can care for, without symptoms, considerably more than the normal stomach capacity for his age, thus emphasizing the rapid passage of food through the stomach, and the insignificance of the gastric action in the infantile digestive process.

Dennett and others allow one or two ounces more than months of age up to eight—possibly ten ounces. This simple rule seems to fit every authority whether calculated by tables or otherwise. To a certain extent all are elastic. Hess states that for underweight babies the allowance may be increased to 2 or even 2½ ounces per pound.

The caloric method allows a latitude of 40 to 55 calories per pound. It seems that age though less technical is about as exact as any after all.

INTERVAL.

The large majority of authors still retain the 2 hour—possibly 2½ hour interval—for the first two to four months. Holt and Dennett advise 3 hours from birth, abolishing midnight feeding about the fourth month. Abt advises five or six feedings daily. Grulee and Truby King only give one night feeding from birth. Grulee feeds at 6—10—2—6—12. Truby King 6—9—12—3—9.

It does seem that with limiting the quantity to thirty-two ounces and omitting the midnight feeding, proves scientifically that eating is all a habit.

But these are all men of experience. If they succeed with the lengthened interval, and omitting the midnight feedings, why can't we?

If it is true with artificial feeding, it must be truer with the breast, and one can not estimate the good such a training would do in preserving the breast supply.

BOILING MILK.

Raw milk is still the preference of some feeders, (Holt, Truby King, Graham and Brackbank) of course if the milk is reliable. The majority of others prefer to pasteurize.

In spite of its defects, many prefer boiling not alone to sterilize but for the purpose of rendering the protein curd soft and small. Boiled milk effectually ends protein troubles.

Budin's method of feeding undiluted unmodified boiled milk from the beginning has been wonderfully successful in France. WHY NOT HERE?

It still is a well established fact that babies can and do thrive upon boiled milk equally as well, and much safer, than upon raw milk.

Many of us can remember the German-American controversy many years ago concerning curds. The difference seemed irreconcilable. Talbot from our standpoint was discussing protein in curds of the unboiled milk and in Germany where all milk was boiled, there was no such entity—only fat curds.

CONCLUSIONS.

There seems to be an entire lack of collaboration among baby feeders. Each seems bent upon perfecting his own method without profiting by the experience of others. For example, if Kerley had used boiled milk he might have been saved the trouble of writing many pages on the care of proteins. If Dennett and a host of others get good results from cane sugar, why not have Morse and others try it?

Infant feeding must be simplified if we expect ordinary practitioners to stop using easy patent foods with the formula on the bottle.

If whole milk mixtures give satisfaction let's teach and preach them.

If boiling cures protein ills, let's boil.

If fats are not digestible, let's dilute them and limit them to 3% at most.

If cane sugar is as good in ordinary cases as lactose, let us use it. If lime water is not necessary, let's omit it. If one or two ounces more than months of age fits every table, let's tear up the tables and forget all about them. If the four-hour interval suits most babies,

let's try it. If midnight feedings are unnecessary, for the sake of suffering humanity and overworked mothers, let's train our babies to that schedule.

The simple sensible standards for feeding normal babies are these:

Feed the best cow's milk available.

Always boil milk at least three minutes especially (1) in starting a formula; (2) in hot weather and (3) in every other case you can conveniently do so.

Always give orange juice to prevent scurvy. Correct constipation with magnesiud or mineral oil.

Feed 1 or 2 oz. more than months of age up to 8 oz., as a maximum, every 3 hours or 4 hours if you can.

Omit feedings after 10 P. M., as early as possible, certainly by the fourth month. Better still never begin them.

Lime water is only necessary in some vomiting babies.

For the first 3 months give half milk and half water with 2 leveled off tablespoons of cane sugar added to the 24-hour quantity.

From 3 to 6 months $\frac{2}{3}$ milk, $\frac{1}{3}$ water with 3 level tablespoons of cane sugar.

From 6 to 8 months $\frac{3}{4}$ milk, to $\frac{1}{4}$ water with 3 level tablespoons of can sugar.

After 8 months whole milk may be given, but $\frac{3}{4}$ is preferable in hot weather.

In all the study of these various methods, there is one fact not sufficiently emphasized, that a baby's reaction to cow's fats, and to cow's protein, and to the added carbohydrates in their association, is always an unknown quantity; that they are foreign elements in a baby's stomach. This reaction must be tried out as near as possible singly. First edneate his stomach to take the boiled protein with a minimum of fats and sugar, then add fats gradually, then sugar. With such precautions, failures are rare even in extremely delicate babies.

DISCUSSION

DR. EUGENE ROSAMOND, Memphis: Dr. Wilson prepared this paper and read it last night before those of us who are interested in pediatrics, and as I heard the paper, and because he thanked me for the remarks I made on it, I am going to try to repeat them here.

The most important point I think Dr. Wilson brings out is the fact that it is adaptability that makes man the "heir of all the ages." It is adapt-

ability that allows a man, who is shipwrecked on a desert island, to grow hair to cover him, to climb tall trees and live off of cocoanuts. It is adaptability that makes man superior to the rest of the animal kingdom.

When we feed a baby cow's milk, we have to allow him time to make a calf stomach out of the human stomach before we can adapt him to the foreign protein of cow's milk. During this period of adaptation we may have trouble in feeding the infant. It is probable that while the child is adapting himself to the cow's milk there may be a change of doctor or some change of food, some minor trifling change which we know makes no difference whatever in the balance of the food, in the value of the elements of the food, and the child begins to take perfect care of it and goes up the hill.

I think today most of us who feed many babies are most heartily in favor of whole milk dilutions and of boiling. All manner of curd softeners have been tried, but there is nothing on earth that will soften curds like boiling.

When Holt first brought out percentage feeding, everybody in the country tried to use it. Because cow's milk turned slightly acid on standing, and it was found that by adding one ounce of lime water to each twenty ounces of cow's milk, it would neutralize the acidity and have the same reaction as mother's milk. The medical profession and the laity seem to think that the minute we add lime water to cow's milk we have modified it; that we have done something which renders it digestible.

DR. HOBSON, Memphis: In regard to Dr. Wilson's paper, I am sure the members of this Association must appreciate a paper of that type. It is a paper that is not too academic for all of us to understand. He goes into the different phases of milk dilution. It would be most excellent if we could in some way perfect a standard that would be inflexible for feeding babies, but that is not possible. We forget that babies are individuals. It is not like the story that "pigs is pigs." Babies are individuals just as much as you are I are individuals. They have individual characteristics, and it is certain we cannot feed all babies alike, but we can adopt a more or less flexible standard similar to the one Dr. Wilson has given us this afternoon which the practitioner, who does not make a special

study of pediatrixes, can use in his practice with great advantage both to himself and to his patients.

DR. OWEN H. WILSON, Nashville, (closing:)
I should like to emphasize the point that this standard I have submitted is for normal babies, and that these feedings should be begun gradually. A baby should be taught to take fat, to take proteids, and to take carbohydrates gradually.

In regard to Dr. Hill's paper pertaining to the requirements of feeding after the first year, and especially after the second year, they may be summed up under four rules. First, regular feeding. I do not succeed well with four meals daily, because the majority of mothers cannot give as much attention to the baby as this requires, if they have to feed the baby by six, ten, and two. I do not stick to the three hour interval—three, six, nine. I like to give light liquid lunches in between, and the mother thinks it is necessary. The mother thinks that the baby should have plenty of fluid, at least a quart of fluid. I do not care what the mothers say, the babies cannot get along without milk, and a lot of babies get sick because they do not get enough milk. Very few are under-nourished because they get too much milk. A large majority of babies suffer because they do not get enough milk, they will have digests—so valuable, but it is necessary as a diluent, and they do not get enough milk, they will have digestive disturbances.

Children are not taught to chew. Cereals are overrated as a class of foods in the whole category. Cereals are not restricted. They need mastication to mix with the saliva. They are used too often as vehicles to carry sugar. In the next place there is a great abuse of sweets. Studies have been made in Massachusetts in regard to the use of sweets and there is a law on the statute books in that state forbidding the selling of sweets to children under thirteen years of age, and I think it is correct.

With reference to the paper of Dr. Harris, I think if Dr. Harris will investigate his case he will find that in nearly all of them the dropped stomachs were due to relaxation from the abuse of sweets in patent foods in early infancy or to the indiscriminate use of sweets in after life. If you give a child sweets, give them to him after meals. Sweets create an acid mouth and cause rotten teeth, and most of you know what rotten teeth will do. If you do not know, somebody will tell you at this meeting.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

SEPTEMBER, 1922

ALEXANDER RIGHTER CRAIG.

Dr. Alexander Righter Craig, Secretary of the American Medical Association, died on September 2, 1922. He was known to many members of the profession in this State not only officially, but personally and it was a warm place he held in their hearts.

The following editorial from the Journal of the A. M. A. is an excellent exposition of his work, associations and personal admirable qualities.

"The sudden passing of Dr. Craig is a shock that makes it difficult of realization. On August 25 he left for his annual vacation, and was spending it with his family in rural Maryland. For some weeks he had not been feeling altogether well, although he treated the matter lightly, and jokingly rejected the suggestion that it was time for him to take his vacation. Finally he got away and then, out of a clear sky, came the telegram telling of his death. The rank and file of the profession probably will never know the loss which it sustains in Dr. Craig's going. It is doubtful whether the impress he has left on the American Medical Association ever will be fully realized, except by the few who have been intimately associated with him. He was so unassuming, so modest, so free from any arrogant or dictatorial spirit, that his far-reaching influence made itself known rather by results rather than by his efforts to bring about those results. Especially valuable were his counsel and advice in the various difficult problems that would come up in matters affecting the organization. To a degree far beyond the average man he was able to see the point of view of the other fellow and, by virtue of his desire to do to others as he would be done by, frequently brought harmony out of what bade fair to be discord. He not only filled the position of Secretary of the Association,

but also was the secretary and executive officer of the Council on Scientific Assembly and of the Judicial Council. In the latter position particularly his exceptional tact showed itself. By his associates at the headquarters office, Dr. Craig was loved for his gentleness and unfailing courtesy. In all the years that he was with the Association, he was never known to make an unkind criticism of those with whom he was thrown in daily contact—subordinate or equal. Criticize, he could and would, when in his opinion principles were at stake, but always in a spirit of helpfulness and service. A rare type of man he was; a re-creation of the spirit of service; a giver of himself; a man whose life was a mission; 'we shall not soon see his like again'."

TENNESSEE IN STATISTICAL BIRTH TEST.

Under the heading of communications received by the Journal there will be found a letter calling the attention of the medical profession to the fact that a birth test will be run by the bureau of the census at Washington as to the eligibility of Tennessee for entrance into the National Birth Registration Area.

The Vital Statistics Law was enacted at the 1914 Session of the Legislature, and under the able direction of Dr. H. H. Shoulders this law was put into effect in the State.

Tennessee was admitted to the National Death Registration Area in 1917, but up until the present time, due to the imperfection of birth registration, we have not been admitted to the National Birth Registration Area.

It is hoped and believed that the medical profession of the State will render every assistance possible in placing Tennessee in the list of those states that are in the National area for Birth Registration.

EYE SIGHT CONSERVATION.

The eye sight conservation council of America, as a result of various inquiries and requests, is establishing a special mailing list of those who wish to receive material of service to lecturers and writers on the subject of Conservation of Vision.

There is need throughout the nation for lecturers who will appear before local organizations and address such organizations as Rotarian and Kiwanis Clubs, Mothers and Parent Teachers' Associations, Schools, Colleges, etc., to present the important subject of eye care and the great need of conservation of vision.

Any who are interested in this work should write direct to the Eye Sight Conservation Council, Times Building, New York, requesting that their name be entered on a special list of those to receive data and material which will be prepared and issued periodically.

AMENDED CONSTITUTION AND BY-LAWS.

At this year's annual session in Memphis, the House of Delegates instructed the Secretary of the Association to publish in the Journal, the Constitution and By-Laws of the Tennessee State Medical Association, as amended to that date.

Pursuant to these instructions the amended Constitution and By-Laws appear on another page of this issue. It is recommended to members of the Association, that this number of the Journal be preserved for reference. There will probably be a few if not more times, when consultation of its contents may avoid confusion and spare unnecessary effort.

Comparison with the last copy of the Constitution and By-Laws, revised and issued in 1918 will show changes in the following portions:

Constitution:

Article VIII, Sections 1, 2, 3.

By-Laws:

Chap. IV.—Sec. 8. Chap. V.—Sec. 1. Chap. V.—Sec. 3. Chap. VI.—Sec. 1. Chap. VI.—Sec. 5, (added). Chap. VII.—Sec. 1. Chap. IX.—Sec. 1.

MALARIA CONTROL.

The malaria control work now being prosecuted in this state is conducted under two divisions. The county-wide demonstration which will be put into effect in Gibson County will be under the direct administrative supervision of Dr. E. L. Bishop, Director, Bureau of Rural Sanitation, while the work in new demonstrations and in continued demonstra-

tions of a local nature is under the supervision of Mr. C. N. Harrub, Chief Sanitary Engineer and Director of the Bureau of Sanitary Engineering, State Board of Health, in cooperation with the United States Public Health Service. The general policy is controlled by the Executive Health Officer, Dr. R. Q. Lillard.

DR. OLIN WEST.

Since the lamented death of Dr. Alexander Craig, Secretary of the American Medical Association, Dr. Olin West has been functioning as Acting Secretary of the National body.

It is with no small amount of pride that the members of the Tennessee State Medical Association observe that our former honored State Secretary, in his new field, is meeting with the appreciation that is due his personality and efforts.

CHATTANOOGA MEETING OF THE SOUTHERN MEDICAL ASSOCIATION.

The Southern Medical Association will hold its sixteenth annual meeting in its birth city—Chattanooga, Tennessee, "The Dynamo of Dixie," Monday, Tuesday, Wednesday and Thursday, November 13-16, 1922.

This meeting will be made up of eighteen sections and conjoint meetings as follows: Section of Medicine, Section of Pediatrics, Section on Radiology, Section on Dermatology, Section on Surgery, Southern States Association of Railway Surgeons, Section on Eye, Ear, Nose and Throat, Section on Public Health, National Malaria Committee, Conference of Malaria Field Workers, Southern Hospital Association, Conference on Medical Education and Southern Association of Anesthetists. In these meetings every phase of medicine and surgery will be treated. The programs are unusually fine this year.

Dr. E. D. Wise, City Health Officer of Chattanooga, will deliver the Address of Welcome, which will be responded to in behalf of the Southern Medical Association by Dr. W. S. Leathers, State Health Officer of Mississippi, Jackson, Mississippi. Dr. C. C. Bass, Dean of Tulane Medical College, New Orleans, will

deliver the Oration on Medicine; Dr. Hubert A. Royster, Raleigh, North Carolina the Oration on Surgery; and Dr. S. W. Welch, State Health Officer of Alabama, Montgomery, Alabama, the Oration on Public Health.

Of unusual interest will be the joint dinner session of the Section on Surgery and the Section on Radiology Tuesday night. Dr. George W. Crile, Cleveland, Ohio, will represent the Section on Surgery, and Dr. George W. Holmes, Massachusetts General Hospital, Boston, the Section of Radiology. All physicians and surgeons are cordially invited to this dinner session.

Entertainments include a President's reception with dance on Tuesday night and a dance and get-together meeting on Wednesday night. On Tuesday and Wednesday elaborate entertainments have been provided for the wives of the physicians, including sight-seeing trips over the historic points of interest, luncheon at Signal Mountain Inn, theater parties, etc. The Chattanooga Committee are anxious for a large attendance of ladies.

For those who golf, tournaments are being arranged. Chattanooga has several wonderful golf courses.

Scientific exhibits bid fair to be of unusual interest. In the health exhibits malaria control work will be featured. In connection with the scientific exhibits there is expected to be a moving picture theater at which scientific films will be featured all during the days of the meeting.

Chattanooga excels in beautiful scenery and in points of historic interest. Lookout Mountain, Missionary Ridge and the historic battle fields alone are worth a trip to Chattanooga.

The Hotel Committee promises comfortable accommodations for all who attend.

Special reduced railroad rates have been granted by all railroads on the certificate plan. The members of the Association will receive without applying for them a certificate entitling them to reduced rates. Any doctor who is a member of his state medical society, although not a member of the Southern Medical Association, who desires to attend this meeting can have the benefit of these reduced rates by requesting a certificate from the Association office.

COMMUNICATIONS.

State Board of Health, Nashville, Tenn.

August 28, 1922.

Dr. Larkin Smith, Editor,
Tennessee State Journal,
154 8th Ave., North,
Nashville, Tennessee.

Dear Doctor Smith:

In my conversation with you Saturday, I asked that you bring to the attention of the medical profession of Tennessee the fact that the Bureau of Vital Statistics of the State Board of Health has received notification from the Census Bureau at Washington that a test will be run as to our eligibility for entrance into the National Birth Registration Area, this test to take place during the month of November.

For Tennessee to gain admittance into the National Birth Registration Area, it is necessary that there be on file in this office a birth certificate for 90% or more of the children that are born in this State during the year 1922. In 1921, there were nearly four thousand more births registered than in the preceding year making an approximate increase of about 10%. During the first six months of 1922, there has been a very marked decrease in the number of births registered.

This is rather a discouraging condition in view of the fact that we will have a test at the time stated above. The birth rate for Tennessee as a whole is 23.1 and the rate for the National Area is 23.7. From this fact, we can draw the conclusion that birth registration in Tennessee in the year 1921 very closely approximated 90% registered.

There are only seven counties in the State that gave a birth rate below 18. They are as follows: Davidson, Fentress, Hardeman, Haywood, Rutherford, Shelby and Tipton.

Thanking you for your very kind assistance in bringing this to the attention of the medical profession, I am

Very truly yours,
C. B. CRITTENDEN, Director.
Division of Vital Statistics.

HEALTH HINTS.

New York State Commissioner of Health.

THE COMMON DRINKING CUP.

The use of the common drinking cup is undoubtedly one of the ways in which contagious diseases are spread, since by its use infection may be carried rapidly from mouth to mouth.

While careful people take pains to wash the edge of the cup before drinking and thus succeed in removing some of the saliva of the previous users, it is a fact proved by careful experiments, that nothing short of soap and hot water will remove all of the germs from the rim of a drinking cup.

The common drinking cup has been banished from railroad trains, first class hotels and many large halls and public buildings, but it is still to be found in many public places. With the many cheap paper cups now available the time has come when the common drinking cup should be absolutely forbidden in all public places. Especially should this rule be rigidly observed in all schools, and other places where children gather, for the poisons causing contagious diseases common to children, such as measles, scarlet fever, diphtheria and so forth are spread from mouth to mouth in saliva, and in coughs and sneezes. Even in the home careful people will see that separate glasses are provided for each member of the family.

While on this subject it may not be out of place to call attention to the lack of proper facilities for the glass washing at many soda fountains and soft drink parlors, where running water is not available. Particular reference is made to roadside shacks and summer resort booths which are in use for only a short period during the year. In such places a simple pail of water, without any soap, has been known to serve for the washing of innumerable glasses during an entire day. Such places should receive immediate attention from the

local health authorities and should be put out of business if they refuse to conform to the rules of common sanitary practice and ordinary decency.

Do not patronize any place where glasses and other eating and drinking utensils are not absolutely clean. Better go thirsty than run the risk of taking disease from some previous customer.

TAKING A HUMAN INVENTORY.

Once a year, or oftener, the up-to-date business man takes a complete inventory of his stock and is thus able to know what is the exact condition of his business. Such an inventory shows what sections or departments are yielding good returns and what departments need special attention in order to put them on a paying basis.

If a yearly inventory is so important in business, how much more important is it that we should take a yearly inventory or examination of the various parts of our bodies to see if they are working properly.

Oftentimes, in business, a poorly paying line or one actually losing money can be changed so that it becomes the most successful one the inventory has shown the necessity of concentrating attention on this particular department. In the same way, a part of the body not working properly can in many cases be brought back to complete health, provided faulty habits and wrong method of living are corrected.

The only way of finding out what condition a person is really in is to have a complete examination. By this is not meant just a hasty examination of the heart, and lungs with a stethoscope. It means a systematic medical survey of the individual, including both mental and physical aspects, and taking into consideration his living and working conditions, habits, recreation, income personal and family history. Various special

test are required, including among others examinations of the blood and secretions, a test of the eyesight and hearing, an x-ray of the chest, and an examination of the nose and throat.

Some people are afraid of having a physical examination made for fear of finding out there is something wrong with them. This attitude is as foolish as fearing to ask, when motoring, if you are on the wrong road; for in both cases the further you go without correction the worse off you are. Both in the matter of health and travelling, first find out if you have made any errors and thereafter, keep to the right road. Health like the high-road is abundantly marked with sign-posts if you are not travelling too swiftly and will take pains to slow up and read them.

Once a year, at least, one should go to a competent physician and have a complete physical examination made. If there is nothing the matter, there is no greater satisfaction than knowing this fact. If, on the other hand, some part of the body is out of repair, learn what it is and what to do to build it up or keep it from growing worse. The human body is the only machine for which there are no spare parts. Learn to use rightly those you have.

THE STATUS OF ARTERIOSCLEROSIS.

Arteriosclerosis is one of those expressions which we at times use so glibly that the untutored person is likely to be profoundly impressed by its presumable medical import. Sometimes other terms, such as atheroma, atherosclerosis or endarteritis deformans, are applied to the same affection of the arteries, characterized most conspicuously by thickening of the wall accompanied by degenerative changes such as fat deposits. Arteriosclero-

sis is occasionally a sort of password thanks to which an open pathway is secured out of the uncertainties of diagnosis. It may come as a surprise, therefore, to those accustomed to deal with arteriosclerosis as a serious entity to learn how uncertain still is our knowledge of its cause and even of its predominant anatomic features. In fact, a pathologist familiar with the subject has not hesitated to state that apart from the conflicting studies of a few investigators, one is impressed by the feeling that most of what is written has only the value of opinion, and that we are extraordinarily ignorant with respect to this common affection. Diametrically opposite views, he adds, are put forward as to the cause, the anatomic nature and the effects of arteriosclerosis; many names of different significance are proposed for it and, withal, there has been no unanimity of opinion as to what should be included under this heading and what excluded. In the debate as to whether the lesions of the media are primary or secondary in the pathologic changes of the arterial wall, MacCallum inclines to accept the paramount importance of the intimal changes. With respect to the latter he emphasizes the presence of lipoid substance followed by a great hyperplasia of the connective tissue and to a less extent of the elastic tissue. Despite the varied experimental efforts to affect the blood vessels adversely, in ways resembling the lesions of arteriosclerosis, by mechanical means through elevation of arterial pressure or otherwise, no success has followed this procedure alone. Only when additional toxic or dietary factors are introduced does the production of experimental arteriosclerosis seem likely at present. Here is a great opportunity for thorough investigation.

—*Jour. A. M. A.*, Sept. 9, 1922.

CONSTITUTION, BY-LAWS AND
PRINCIPLES OF MEDICAL ETHICS
of the
TENNESSEE STATE MEDICAL ASSOCIATION.
(Revised 1922.)

CONSTITUTION.

ARTICLE I.

NAME OF THE ASSOCIATION.

The name and title of this organization shall be "THE TENNESSEE STATE MEDICAL ASSOCIATION."

ARTICLE II.

PURPOSES OF THE ASSOCIATION.

The purposes of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of Tennessee and to unite with similar associations in other States to form the American Medical Association, with a view to the extension of medical knowledge and to the advancement of medical science, to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians and to the guarding and fostering of their material interests, and to the enlightenment and direction of public opinion in regard to the great problems of State medicine, so that the profession shall become more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life.

ARTICLE III.

COMPONENT SOCIETIES.

Component Societies shall consist of those County Medical Societies which hold charters from this Association.

ARTICLE IV.

COMPOSITION OF THE ASSOCIATION.

SECTION 1. This Association shall consist of Members, Delegates, and Guests.

SEC. 2. *Members.*—The Members of this Association shall be the members of the component County Medical Societies; and commissioned officers of the Medical Departments of the U. S. Army and Navy and Public Health Service, elected by a two-thirds vote at any regular meeting.

SEC. 3. *Delegates.*—Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component County Societies in the House of Delegates of this Association.

SEC. 4. *Guests.*—Any distinguished physician not a resident of this State may become a Guest during any Annual Session upon invitation of the Association or its Council, and shall be accorded the privilege of participating in all of the scientific work for that session.

ARTICLE V.

HOUSE OF DELEGATES.

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegates elected by the Component County Societies, (2) ex-officio the officers of the Association as defined in this Constitution, and (3) the ex-Presidents of this Association residing in Tennessee.

ARTICLE VI.

SECTIONS AND DISTRICT SOCIETIES.

The House of Delegates may provide for a division of the scientific work of the Association into appropriate sections, and for the organization of such Councilor District Societies as will promote the best interests of the profession, such societies to be composed exclusively of members of component County Societies.

ARTICLE VII.

SESSIONS AND MEETINGS.

SECTION 1. The Association shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates and guests.

SEC. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates; provided that every alternate year the meeting shall be held in Nashville, the

intervening meetings to alternate between the Eastern Division and the Western Division of the State.

ARTICLE VIII.

OFFICERS.

SECTION 1. The officers of this Association shall be a President, Speaker of the House of Delegates, three Vice Presidents, a Secretary, a Treasurer, three Trustees of the *Journal*, and ten Councilors, one of whom shall be from each Congressional District of the State.

SEC. 2. All the officers shall be elected annually except the Trustees of the *Journal* and the Councilors. Three Trustees of the *Journal* shall be elected at the annual session of 1909, no two of whom shall be from the same grand division of the State. One Trustee shall be elected to serve for one year, one to serve for two years, and one to serve for three years. At each annual session thereafter one Trustee shall be elected to serve for three years.

The term of office of the Councilors shall be two years, except that five of the ten herein provided for shall be elected at the annual session of 1909 to serve for one year only. At each annual session thereafter five Councilors shall be elected to serve for two years.

The President, Secretary and Speaker of the House of Delegates shall be members of the Council *ex-officio*, and any five councilors shall constitute a quorum.

SEC. 3. All the officers of this Association, except the Treasurer, and the Councilors, shall be elected by the House of Delegates on the morning of the last day of the annual session, but no delegate shall be eligible to offices except those of Trustees of the *Journal* and Councilor, and no person except the Trustees and the Councilors shall be elected to any office who is not in attendance at the annual session. No one shall be eligible for President of this Association who has not been a member in good standing for the five years next preceding the election, nor for Vice President who has not been a member in good standing for the three years next preceding. The Councilors shall be elected on the second day of the annual session. Nominations shall be made by any members of the House of Delegates and election may be by acclamation.

ARTICLE IX.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees of the *Journal*, composed of three members of this Association, elected as heretofore, shall select its own chairman, who shall be *ex-officio* Treasurer of this Association. The Trustees shall have entire control of the publication, the policy, and the editorial and financial management of the *Journal* of the Association. It shall be authorized and empowered to make all contracts necessary for the conduct of the *Journal*.

The Chairman of this Board, who is also *ex-officio* Treasurer of this Association, shall be the custodian of all the funds derived from the *Journal*.

The Board of Trustees shall hold semi-annual meetings and such other meetings as the business of the *Journal* may require, subject to the call of the Chairman. The Board of Trustees shall make all expenditures of the funds of the Association, and render at the annual meeting a full and detailed account of all receipts and disbursements. In the event of death or vacancy of any member of the Board of Trustees between the annual sessions of the Association, the Vice President for that division of the State in which the vacancy occurs shall fill the position until the next annual meeting.

SEC. 2. The Board of Trustees shall serve without compensation, except the Chairman, who is *ex-officio* the Treasurer, whose compensation shall be fixed by the House of Delegates; however, their actual expenses in attending the meetings of the Board shall be paid out of the funds of the Association.

ARTICLE X.

FUNDS AND EXPENSES.

Funds for meeting the expenses of the Association shall be arranged for by the House of Delegates by an equal *per capita* assessment upon each County Society, to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publications. Funds may be appropriated by the House of Delegates to defray the expenses of the Annual Sessions, for publication, and for such other purposes as will promote the welfare of the Association and profession.

ARTICLE XI.

REFERENDUM.

The General Meeting of the Association may, by a two-thirds vote, order a general referendum upon any question pending upon the House of Delegates; and the House of Delegates may, by a similar vote of its own members, or after a like vote of the General Meeting, submit any such question to the membership of the Association for a final vote; and if the persons voting shall comprise a majority of all the members, a majority of such vote shall determine the question and be binding upon the House of Delegates.

ARTICLE XII.

THE SEAL.

The Association shall have a common Seal, with power to break, change, or renew the same at pleasure.

ARTICLE XIII.

AMENDMENTS.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates registered at that Annual Session; provided that such amendment shall have been presented in open meeting at the previous Annual Session, and that it shall have been sent officially to each component County Society at least two months before the session at which final action is to be taken.

BY-LAWS

CHAPTER I.

SECTION 1. All members of the component County Societies shall be privileged to attend all meetings and take part in all of the proceedings of the Annual Sessions, and shall be eligible to any office within the gift of the Association.

SEC. 2. The name of a physician upon a properly certified roster of members, or list of delegates, of a chartered County Society which has paid its annual assessment, shall be *prima facie* evidence of his right to register at the annual session in the respective bodies of this Association.

SEC. 3. No person who is under sentence of suspension or expulsion from any component Society of this Association or whose name has been dropped from its roll of members shall be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take any part in any of its proceedings until such time as he has been relieved of such disability.

SEC. 4. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the component Society of which he is a member. When his right to membership has been verified by reference to the roster of his Society, he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of an Annual Session until he has complied with the provisions of this section.

SEC. 5. The Section of Eye, Ear, Throat and Nose may be formed, which may hold a separate session at some time of the annual meeting for the discussion of such technical questions as would be profitless in the general session; all other papers pertaining to these organs to be on the general program.

The officers shall be Chairman, Vice-Chairman, and Secretary of the Section, and they shall be elected by its members.

CHAPTER II.

ANNUAL AND SPECIAL SESSIONS OF THE ASSOCIATION.

SECTION 1. The Association shall hold an Annual Session on the second Tuesday in April, and at such place as has been fixed at the preceding Annual Session.

SEC. 2. Special sessions of either the Association or House of Delegates shall be called by the President at his discretion or upon petition of twenty delegates.

CHAPTER III.

GENERAL MEETINGS.

SECTION 1. The General Meetings shall include all registered members, delegates, and guests, who shall have equal rights to participate in the proceedings and discussions, and except guests, to vote on pending questions. Each General Meeting shall be presided over

by the President, or, in his absence or disability or by his request, by one of the Vice Presidents. Before it, at such time and place as may have been arranged, shall be delivered the annual address of the President and the annual orations; and the entire time of the session, so far as may be, shall be devoted to papers and discussions relating to scientific medicine.

SEC. 2. The General Meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same, but any expense in connection therewith must first be concurred in by the House of Delegates.

SEC. 3. Except by special vote, the order of exercises, papers, and discussions as set lowered from day to day until it has been completed, and all papers omitted will be recalled in regular order.

SEC. 4. No address or paper before the Association, except the addresses of the President and orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on any subject, provided each essayist be allowed five minutes in which to close the discussion.

SEC. 5. All papers read before the Society shall be its property. Each paper shall be deposited with the Secretary when read; and if this is not done, it shall not be published; but each essayist may furnish a copy to one or more medical journals for publication, after the paper has been read before the Association.

CHAPTER IV.

HOUSE OF DELEGATES.

SECTION 1. The House of Delegates shall meet annually at the time and place of the Annual Session of the Association, and in order not to conflict with the General Meeting of the Association, or with the meeting held for the address of the President and the annual orations, it shall meet at 8 to 9 A. M. and 2 to 3 P. M. each day, until the work is finished, so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with their duties; but it the business interests of the Association and

profession require, it may meet in advance or remain in session after the final adjournment of the General Meeting.

SEC. 2. Each component County Society shall be entitled to send to the House of Delegates each year one delegate for every fifty members, and one for every fraction thereof; but each County Society holding a charter from this Association, which has made its annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate.

SEC. 3. A majority of the registered delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Association.

SEC. 4. It shall, through its officers, Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each Annual Session a stepping-stone to future ones of higher interest.

SEC. 5. It shall consider and advise as to the material interests of the profession and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation and to diffuse popular information in relation thereto.

SEC. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such County Societies as already exist and for organizing the profession in counties where equality, and shall continue these efforts until societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality, and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

SEC. 7. It shall encourage post-graduate work in medical centers, as well as home study and research and endeavor to have the results of the same utilized and intelligently discussed in the County Societies.

SEC. 8. It shall elect representatives to the House of Delegates of the American Medical

Association in accordance with the Constitution and By-Laws of that body; that there shall be three delegates, one from each grand division of the state, who shall serve for a period of three years.

SEC. 9. It shall, upon application, provide and issue charters to County Societies, organized to conform to the Spirit of this Constitution and By-Laws.

SEC. 10. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into Societies, to be designated by hyphenating the names of two or more counties so as to distinguish them from district and other classes of Societies; and these Societies, when organized and chartered, shall be entitled to all the privileges and representation provided herein for County Societies until such counties may be organized separately.

SEC. 11. The Societies now existing known as East Tennessee, West Tennessee, and Middle Tennessee Associations, may, by a two-thirds vote of their members at a regular meeting, if they so desire, become component members of the State Association, provided that their members are members of the affiliated County Medical Societies; and the District Societies may if they desire, by two-thirds vote of their members, become component members of the State Associations, provided they hold their meetings in the fall of the year; and provided, further, that the Presidents of these Associations shall be the three Vice Presidents of the Tennessee State Medical Association.

SEC. 12. It shall have authority to appoint committees for special purposes from its own membership, or from among members of the Association who are not members of the House of Delegates; and such committees may report to the House of Delegates; in person, and may participate in the debate thereon.

CHAPTER V.

ELECTION OF OFFICERS.

SEC. 1. All elections, except the Councilors shall be by secret ballot, and the majority of the votes cast shall be necessary to elect. The five Councilors shall be elected for two years, on the second day of the annual session and, if practicable, immediately following the Councilors' reports.

SEC. 2. On the first day of the Annual

Session the delegates from each of the three grand divisions shall select three delegates from their respective divisions, to serve as a Committee on Nominations, no two of whom shall be from the same county. It shall be the duty of this committee to consult with the members of the Association and to hold one or more meetings, at which the best interests of the Association and of the profession of the State for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of three members for the office of President and of one member for each of the other offices to be filled at that Annual Session.

SEC. 3. The report of the Nominating Committee and the election of officers, except the Councilors, shall be the first order of business of the House of Delegates after the reading of the minutes of the morning of the last day of the General Session.

SEC. 4. Nothing in this article shall be construed to prevent additional nominations being made by members of the House of Delegates.

SEC. 5. In balloting for the nominees for President, if on the first ballot no one receives a majority of the votes cast, the name receiving the smallest number of votes shall be dropped, and the balloting shall proceed in this manner until an election is had.

CHAPTER VI.

DUTIES OF OFFICERS.

SEC. 1. The President shall preside at all meetings of the Association and of the House of Delegates, shall appoint all committees not otherwise provided for, shall deliver an annual address at such time as may be arranged, shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable, shall visit by appointment the various sections of the State and assist the Councilors in building up the County Societies and in making their work more practical and useful.

SEC. 2. The Vice President shall assist the President in the discharge of his duties. In the event of his death, resignation, or removal,

the Vice President to succeed him shall be from the same Grand Division of the State.

SEC. 3. The Treasurer shall give bond for the trust reposed in him whenever the House of Delegates shall deem it requisite. He shall demand and receive all funds due the Association, together with the bequests and donations. He shall pay money out of the treasury only as provided for in Chapter IX, as defined and set forth in the duties of the Board of Trustees; he shall subject his accounts to such examination as the House of Delegates may order; he shall annually render an account of his doings and of the state of the funds in his hands; he shall charge upon his books the assessments against each component County Society at the end of the fiscal year; he shall collect and make proper credits for the same and perform such other duties as may be assigned to him. The compensation of the Treasurer shall be \$100 per annum as an honorarium.

SEC. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the programmes for and attend all meetings of the Association and of the House of Delegates, and he shall keep minutes of their respective proceedings in separate record books. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Association which come into his hands; he shall provide for the registration of the members and delegates at the Annual Sessions; he shall keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his County Society, and upon request, shall transmit a copy of this list to the American Medical Association for publication. In so far as it is in his power, he shall use the printed matter, correspondence, and influence of his office to aid the Councilors in the organization and improvement of the County Societies, and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election and Committees of their appointment and duties. He shall act as Chairman of the Committee on Scientific Work. He shall be the editor of the *Journal* of the Asso-

ciation, and shall discharge such duties as the Trustees may direct. He shall receive for his services the sum of one thousand dollars, (\$1,000) annually out of the funds of the Association.

SEC. 5. It shall be the duty of the Speaker of the House of Delegates to preside at all meetings of the House of Delegates and to exercise all the powers and perform all the duties heretofore devolving upon the President of the Association when presiding over the House of Delegates.

CHAPTER VII.

COUNCIL.

SEC. 1. The Council shall hold meetings during the Annual Session of the Association, and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet after the election of Councilors on the second day of the annual session for reorganization and for the outlining of the work of the ensuing year. At this meeting it shall elect a Chairman and a Secretary, and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such time as may be provided.

SEC. 2. Each Councilor shall be organizer, peacemaker, and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing Component Societies where none exist, for inquiring into the condition of the profession, and for improving and increasing the zeal of the County Societies and their members; he shall make an annual report of his doings and of the condition of the profession of each county in his district to each Annual Session of the House of Delegates. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the House of Delegates upon a properly itemized statement, but this shall not be construed to include his expense in attending the Annual Session of the Association.

SEC. 3. Collectively the Council shall be the Board of Censors of the Association. It shall consider all questions involving the rights and standing of members whether in relation to other members, to the Component Societies,

or to this Association. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a County Society upon which an appeal is taken from the decision of an individual Councilor. Its decision in all such cases shall be final.

CHAPTER VIII.

Section 1. The Standing Committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Nominations.

A Committee on Arrangements.

Such other committees as may be necessary.

Such Committees shall be appointed by the President unless otherwise provided.

SEC. 2. The Committee on Scientific Work shall consist of three members, of which the Secretary shall be a member, and Chairman, and shall determine the character and scope of the scientific proceedings of the Association for each session, subject to the instructions of the House of Delegates or of the Association or to the provisions of the Constitution and By-Laws. Thirty days previous to each Annual Session it shall prepare and issue a programme announcing the order in which papers, discussions, and other business shall be presented, which shall be adhered to by the Association as nearly as practicable.

SEC. 3. The Committee on Public Policy and Legislation shall consist of three members—one from each Grand Division of the State—and the President and Secretary. Under the direction of the House of Delegates it shall represent the Association in securing and enforcing legislation in the interest of the public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence in local, State, and national affairs and elections. Its work shall be done with the dignity becoming a great profession and with that wisdom

which shall make effective its power and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such time as may be arranged during the Annual Session.

SEC. 4. The Committee on Nominations shall be appointed and perform its duties in accordance with the provisions of Chapter V, Sections 2, 3, and 4, of these By-Laws:

SEC. 5. The Committee on Arrangements shall consist of the Component Society in the territory in which the Annual Session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meetings places of the Association and of the House of Delegates, and of their respective committees, and shall have general charge of all the arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the programme, and shall make additional announcements during the session as occasion may require.

CHAPTER IX.

ASSESSMENTS AND EXPENDITURES.

SECTION 1. An assessment of \$4.00 per capita on the active membership of the Component Societies is hereby made the annual dues and subscription to the *Journal* of this Association; provided the Component Society does not include in its Honorary Membership any physician residing within the State, and who is not a member of another County Society, and provided it only includes in its veteran list physicians who are seventy years of age or older, and who have been members of an official society five preceding years.

SEC. 2. The Secretary of each County Society shall forward a roster of all officers, a list of delegates and members, and a list of non-affiliated physicians of the county, also a list of members who have died during the year, to the Secretary of this Association thirty days in advance of the Annual Session.

SEC. 3. The Treasurer of each County Society shall collect and forward to the Treasurer of this Association the assessment of \$4.00 per capita for each active member not later than fifteen days before the opening of each Annual Session.

CHAPTER X.

RULES OF CONDUCT.

The principles set forth in the Code of Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

CHAPTER XI.

RULES OF THE ORDER.

The deliberations of this Association shall be governed by parliamentary usage as contained in Robert's "Rules of Order," unless otherwise determined by a vote of its respective bodies.

CHAPTER XII.

COUNTY SOCIETIES.

SECTION 1. All County Societies now in affiliation with the State Association, or those that may hereafter be organized in this State which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, upon application to the House of Delegates, receive a charter from, and become a component part of this Association.

SEC. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no Component Society exists, and charters shall be issued thereto.

SEC. 3. Charters shall be issued only upon approval of the House of Delegates, and shall be signed by the President and Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any Component County Society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

SEC. 4. Each County Society shall judge of the qualification of its own members; but as such Societies are the only portals to this Association and to the American Medical Association, every reputable and legally registered physician who is practicing or who will agree to practice non-sectarian medicine shall be entitled to membership. Before a charter is issued to any County Society full and ample notice and opportunity shall be given to every such physician in the county to become a member.

SEC. 5. Only one component Medical Society shall be chartered in any county. Where more than one County Society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the district, if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

SEC. 6. Any Physician who may feel aggrieved by the action of the Society in his county in refusing him membership or in suspending or expelling him, shall have the right of appeal to the Council.

SEC. 7. In hearing appeals the Council may admit oral or written evidence, as in its judgment will best and most fairly present the facts; but in case of every appeal, both as a board and as an individual Councilor in district and county work, efforts at conciliation and compromise shall precede all such hearings.

SEC. 8. When a member in good standing in a Component Society moves to another county in this State, his name, upon request, shall be transferred, without cost, to the roster of the County Society into whose jurisdiction he moves.

SEC. 9. A physician living on or near a county line may hold his membership in that county most convenient for him to attend, on permission of the Society in whose jurisdiction he resides.

SEC. 10. Each County Society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral, and material condition of every physician in the county; and systematic effort shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every qualified physician in the county.

SEC. 11. Frequent meetings shall be encouraged and the most attractive programmes arranged that are possible. The younger members shall be especially encouraged to do post-graduate and original research work and to give the Society the first benefit of such labors. Official position and other preferments may be unstintingly given to such members.

SEC. 12. At some meeting in advance of the Annual Session of this Association each County Society shall elect a delegate or delegates to represent it in the House of Delegates of this Association, in the proportion of one delegate to each fifty members, or fraction thereof; and the Secretary of the Society shall send a list of such delegates to the Secretary of this Association at least ten days before the Annual Sessions.

SEC. 13. The Secretary of each County Society shall keep a roster of its members and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplied him for the purpose to the Secretary of this Association, thirty days in advance of each Annual Session. In keeping such a roster the Secretary shall note any changes in the personnel of the profession by death or by removal to or from the county, and in making his annual report shall be certain to account for every physician who has lived in the county during the year.

CHAPTER XIII.

AMENDMENTS.

These BY-LAWS may be amended at any Annual Session by a majority vote of all the delegates present at that session, after the amendment has been made in writing, and has been laid upon the table for one day.

PRINCIPLES OF MEDICAL ETHICS.

The American Medical Association in lieu of the Code of Ethics adopted the following:

CHAPTER I.

DUTIES OF PHYSICIANS TO THEIR PATIENTS.

SECTION 1. Physicians should not only be ever ready to obey the calls of the sick and the injured, but should be mindful of the high character of their mission and of the responsibilities they must incur in the discharge of momentous duties. In their ministrations they

should never forget that the comfort, the health, and the lives of those entrusted to their care depend on skill, attention, and fidelity. In deportment they should unite tenderness, cheerfulness and firmness, and thus inspire all sufferers with gratitude, respect and confidence. These observances are the more sacred because, generally, the only tribunal to adjudge penalties for unkindness, carelessness, or neglect is their own conscience.

SEC. 2. Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted, in their professional visits, should be guarded with the most scrupulous fidelity and honor.

SEC. 3. The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, nor infirmity of disposition or flaw of character observed during medical attendance, should ever be divulged by physicians, except when imperatively required by the laws of the State. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

SEC. 4. Frequent visits to the sick are often requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, and to meet promptly every change which may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient; but to secure the patient against irritating suspense and disappointment, the regular and periodical visits of the physician should be made as nearly as possible at the hour when they may be reasonably expected by the patient.

SEC. 5. Ordinarily the physician should not be forward to make gloomy prognostications, but should not fail, on proper occasions, to give timely notice of dangerous manifestations to the friends of the patient, and even to the patient, if absolutely necessary. This notice, however, is at times so peculiarly alarming when given by the physician that its deliverance may often be preferably assigned to another person of good judgment.

SEC. 6. The physician should be a minister of hope and comfort to the sick, since life may be lengthened or shortened not only by the acts but by the words or manner of the physician, whose solemn duty it is to avoid all utterances and actions having a tendency to discourage and depress the patient.

SEC. 7. The medical attendant ought not to abandon a patient because deemed incurable, for continued attention may be highly useful to the sufferer and comforting to the relatives even in the last period of the fatal malady, by alleviating pain and by soothing mental anguish.

SEC. 8. The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of evil conduct, ought never to be neglected. Good counsels, or even remonstrances, will give satisfaction, not offense, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

CHAPTER II.

DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

ARTICLE I.

DUTIES OF THE SUPPORT OF PROFESSIONAL CHARACTER.

SECTION 1. Every one, on entering the profession, and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. It is inconsistent with the principles of medical science and it is incompatible with honorable standing in the profession for physicians to designate their practice as based on an exclusive dogma or a sectarian system of medicine.

SEC. 2. The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honor the fraternity as a body; should endeavor to promote the science and art of medicine, and should entertain a due respect for those seniors

who by their labors have contributed to its advancement.

SEC. 3. Every physician should identify himself with the organized body of his profession as represented in the community in which he resides. The organization of local or county medical societies, where they do not exist, should be effected so far as practicable. Such county societies, constituting, as they do, the chief element of strength in the organization of the profession, should have the active support of their members and should be made instruments for the cultivation of fellowship, for the exchange of professional experience, for the advancement of medical knowledge, for the maintenance of ethical standards, and for the promotion in general of the interests of the profession and the welfare of the public.

SEC. 4. All County Medical Societies thus organized ought to place themselves in affiliation with their respective State Associations, and these, in turn, with the American Medical Association.

SEC. 5. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to the patients, as without it their respect and confidence can not be commanded, and to the profession, because no scientific attainments can compensate for the want of correct moral principles.

SEC. 6. It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an unclouded mind are essential to the welfare and even to the life of a human being.

SEC. 7. It is incompatible with honorable standing in the profession to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certifi-

cates of skill and success, or to employ any of the other methods of charlatans.

SEC. 8. It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade the legal restrictions governing the practice of medicine; or to dispense or promote the use of secret medicines, for if such nostrums are of real efficacy any concealment regarding them is inconsistent with beneficence and professional liberality, and if mystery alone gave them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically.

ARTICLE II.

PROFESSIONAL SERVICE OF PHYSICIANS TO EACH OTHER.

SECTION 1. Physicians should not, as a general rule, undertake the treatment of themselves, nor of members of their family. In such circumstances they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. These visits ought not, however, to be obtrusively made, as they may give rise to embarrassment or interfere with the free choice on which confidence depends.

SEC. 2. All practicing physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them.

SEC. 3. When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor, should be made by the patient or relatives.

SEC. 4. When more than one physician is attending another, one of the number should take charge of the case, otherwise the concert of thought and action so essential to wise treatment can not be assured.

SEC. 5. The affairs of life, the pursuit of health, and the various acts and contingencies to which a physician is particularly exposed, sometimes require the temporary withdrawal of

this physician from daily professional labor, and the appointment of a colleague to act for a specified time. The colleague's compliance is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician.

ARTICLE III.

THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATION.

SECTION 1. The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the contingencies of disease or accident.

(SEC. 1-A. Interpretation of Sec. 1. Provided, however, that no consultation shall be held with physicians who designate their practice as based on any exclusive dogma or sectarian system of medicine.)

SEC. 2. Consultations should be promoted in difficult cases, as they contribute to confidence and more enlarged views of practice.

SEC. 3. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence of all others.

SEC. 4. As professional engagements may sometimes cause delay in attendance, the physician who first arrives should wait for a reasonable time after which the consultation should be considered as postponed to a new appointment.

SEC. 5. In consultation no insincerity, rivalry, or envy should be indulged in; candor, probity, and all due respect should be observed toward the physician in charge of the case.

SEC. 6. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered which were not the result of previous deliberation and concurrence.

SEC. 7. No decision should restrain the attending physician from making such subsequent variations in the mode of treatment as any unexpected change in the character of the case may demand. But at the next consultation reasons for the variation should be stated.

The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

SEC. 8. The attending physician, at any time, may prescribe for the patient; not so the consultant, when alone, except in a case of emergency, or when called from a considerable distance. In the first instance, the consultant should do what is needed, and in the second, should do no more than make an examination of the patient, and leave a written opinion, under seal, to be delivered to the attending physician.

SEC. 9. All discussions in consultations should be held as confidential. Neither by words nor by manner should any of the participants in a consultation assert or intimate that any part of the treatment pursued did not receive his assent.

SEC. 10. It may happen that two physicians can not agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement a third physician should, if practicable, be called in. None but the rarest and most exceptional circumstances would justify the consultant in taking charge of the case. He should not do so merely on the solicitation of the patient or friends.

SEC. 11. A physician who is called in consultation should observe the most honorable and scrupulous regard for the character and standing of the attending physician, whose conduct of the case should be justified, as far as can be, consistently with the conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

ARTICLE IV.

DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

SECTION 1. Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice especially on the character and extent of their medical education.

SEC. 2. The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints rela-

tive to the nature and treatment of the patient's disorder, nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

SEC. 3. The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4. A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another physician, in the same illness, except in the case of a sudden emergency, or in consultation with the physician previously in attendance, or when that physician has relinquished the case or has been dismissed in due form.

SEC. 5. The physician acting in conformity with the preceding section should not make damaging insinuations regarding the practice previously adopted, and, indeed, should justify it if consistent with truth and probity; for it often happens that patients become dissatisfied when they are not immediately relieved, and, as many diseases are naturally protracted, the seeming want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

SEC. 6. When a physician is called to an urgent case, because the family physician is not at hand, unless assistance in consultation is desired, the former should resign the care of the patient immediately on the arrival of the family physician.

SEC. 7. It often happens, in cases of sudden illness, and of accidents and injuries, owing to the alarm and anxiety of friends, that several physicians are simultaneously summoned. Under these circumstances, courtesy should assign the patient to the first who arrives and who, if necessary, may invoke the aid of some of those present. In such a case, however, the acting physician should request that the family physician be called, and should withdraw unless requested to continue in attendance.

SEC. 8. Whenever a physician is called to the patient of another physician during the enforced absence of the physician, the case should be relinquished on the return of the latter.

SEC. 9. A physician, while visiting a sick person in the country, may be asked to see another physician's patient because of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

SEC. 10. When a physician who has been engaged to attend an obstetric case is absent, and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to the professional fee, but must resign the patient on the arrival of the physician first engaged.

ARTICLE V.

DIFFERENCES BETWEEN PHYSICIANS.

SECTION 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such unfortunate cases occur and can not be immediately adjusted, they should be referred to the arbitration of a sufficient number of impartial physicians.

SEC. 2. A peculiar reserve must be maintained by professional questions, and as there exist many points in physicians toward the public in regard to some pro-medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which can not be understood or appreciated by general society, neither the subject-matter of their differences nor the adjudication of the arbitrators should be made public.

ARTICLE VI.

COMPENSATION.

SECTION 1. By the members of no profession are eleemosynary services more liberally dispensed than by the medical, but justice requires that some limits should be placed on their performance. Poverty, mutual professional obligations, and certain of the public duties named in Sections 1 and 2, of Chapter III, should always be recognized as presenting valid

claims for gratuitous services; but neither institutions endowed by the public or the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege.

SEC. 2. It can not be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform military duty; to testify to the states of health of persons wishing to insure their lives, obtain pensions, or the like, without due compensation. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

SEC. 3. Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgment from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

SEC. 4. It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character for physicians to solicit or to receive such commissions.

CHAPTER III.

THE DUTIES OF THE PROFESSION TO THE PUBLIC.

SECTION 1. As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its laws, institutions, and burdens; especially should they be ready to co-operate with the proper authorities in the administration and observance of sanitary laws and regulations and they also should ever be ready to give counsel to the public in relation to subjects especially appertaining to their profession, as on questions of sanitary police, public hygiene, and legal medicine.

SEC. 2. It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions; in regard to measures for the prevention of epidemics and contagious diseases; and when pestilence prevails, it is

their duty to face the danger, and to continue their labors for the alleviation of the suffering people, even at the risk of their own lives.

SEC. 3. Physicians, when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

Sec. 4. It is the duty of physicians who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects and to make known the injuries sustained by the unwary from the devices and pretensions of artful impostors.

SEC. 5. It is the duty of physicians to recognize and by legitimate patronage to promote the profession of pharmacy, on the skill and proficiency of which depends the reliability of remedies; but any pharmaeist who, although educated in his own profession, is not a qualified physician, and who assumes to prescribe for the sick, ought not to receive such countenance and support. Any druggist or pharmacist who dispenses deteriorated or sophisticated drugs, or who substitutes one remedy for another designated in a prescription, ought thereby to forfeit the recognition and influence of physicians.

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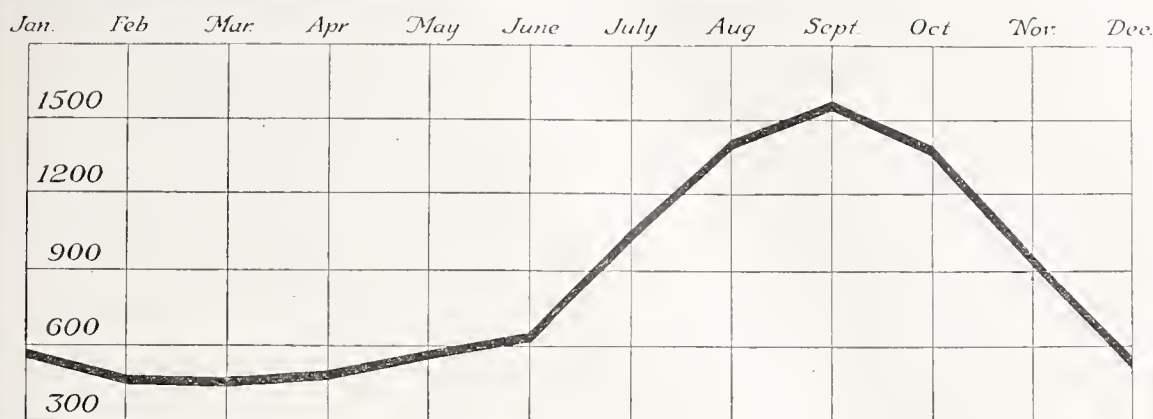
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Typical Yearly Curve for Deaths From Typhoid Fever in the United States

If typhoid immunization were given by every physician to just his regular patients this high death rate for the month of September would never occur. Swan-Myers "T-A-B" Bacterin No. 42 is made from the identical strains and by the same methods as is the vaccine used in the U. S. Army and Navy. It is carefully standardized as to potency, sterility and freedom from toxicity. Always obtainable from druggists and supply houses. Individual package (1 complete immunization) \$0.75, Hospital package (12 complete immunizations) \$5.00

SWAN-MYERS COMPANY, Indianapolis, U. S. A.
Pharmaceutical and Biological Laboratories

The Management of an Infant's Diet

A
 Rational Procedure
 in
 Summer Diarrhea

**For Infants
 of any age**

Mellin's Food

4 level tablespoonfuls

Water (boiled, then cooled)

16 fluid ounces

Give one to three ounces every hour or two, according to the age of the baby, continuing until stools lessen in number and improve in character.

Milk, preferably skimmed, may then be substituted for water—one ounce each day—until regular proportions of milk and water, adapted to the age of the baby, are reached.

Mellin's Food Company, Boston, Mass.

BOOK REVIEW.

PRINCIPLES AND PRACTICE OF X-RAY TECHNIC FOR DIAGNOSIS.—By John A. Metzger, M. D., Roentgenologist to the School for Graduates of Medicine, Medical Department, University of California, Southern Division, Los Angeles, 144 pages, with 61 illustrations. St. Louis, The C. V. Mosby Company, 1922. Price \$2.75.

During such a time as the present when so many x-ray technicians are being turned out by the different Roentgenologists through the country it is very fitting that such a work should be presented.

Federal students who are taking vocational training along this line are often turned out with very little true knowledge as to positioning and technic of exposure. The average technician has only watched the other man and consequently he has not the correct idea in doing high class work. As a rule these technicians are not competent to take charge of an x-ray laboratory in the efficient way that is expected of them.

Dr. Metzger has placed before the beginner his book on "The Principles and Practice of X-ray Technic for Diagnosis." He deals only with technic for diagnosis and begins with the Physics of x-ray work and carries one through the entire procedure until the film is taken from the dark room taking each step that one is required to go through before high class work can be produced and in the very simple and exact way that it should be carried out.

The little book will certainly be welcomed by those who wish to start their work properly.

One correction might be made on Page 33 line seven, second word, "pyelogram" should read "pylorogram."

On taking the two views necessary on the wrist joint it might be suggested that there be no rotation of the radius for the lateral view; the rotation should come in the shoulder so as to keep

the palmar surface towards the biceps during both exposures. If the rotation takes place in the elbow for the lateral view, one does not change the position of the ulna at all, thus obscuring a fracture of the styloid process of the ulna which is frequently present, and both exposures pass through the ulna in the same line. If the shoulder is rotated one will have two pictures at right angles which is required for correct interpretation.

C. C. McC.

THE SURGICAL CLINICS OF NORTH AMERICA.—The June number of the Surgical Clinics of North America issued by the surgeon of Chicago has an unusual interest as well as cases of practical importance to general surgeons.

There are twenty-two contributors to this number from the foremost rank of the Chicago profession.

If it were not for the necessity of wading through such a mass of detail not only in the clinical history, but physical and laboratory examinations, technic of operation and after care; the volume would be extremely interesting to the experienced surgeon. For the large class of men over the country that at the present time are endeavoring to do surgery in the smaller communities, such a work is invaluable but even here, it would be just as valuable with the statements of the police omitted such as:

"The patient was robbing a pool room. the police entered and the patient attempting to get away jumped through a glass door. A policeman shot at the patient as he was running away, shooting him twice through the abdomen and once in left buttock."

The location of wounds and direction of missiles could be given in about one-fourth the space.

The teachings throughout are sound, no very wide departures from the consensus of surgical opinion.

R. C.

THE JOURNAL

OF THE

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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THE PRINCIPLES OF PROGNOSIS IN PULMONARY TUBERCULOSIS.*

W. H. WITT, M. D., NASHVILLE.

PHYSICIANS who deal with the subjects pulmonary tuberculosis are compelled by the insistence of the patient himself or by his solicitous family to try to formulate some opinion in the matter of prognosis. In fact from the patient's standpoint, prognosis is more important than any of the refinements of diagnosis, the meaning of shadows or the question of bovine or human origin of the bacillus. The latter are only of secondary importance compared with the vital question of his recovery—complete or incomplete. The patient is apt to take a more gloomy view of his prospects than his physician, in many cases, for he knows little of the curability of tuberculosis and his observations have encompassed more cases of death than of permanent arrest. The most his knowledge of the disease, and indeed of ours too, can call to his encouragement is that there may be a permanent arrest of the process. And yet though he can't think in terms of cure—when he does secure an arrest it is remarkable how easy it is for him to become careless and invite a recrudescence.

Given a diagnosis of pulmonary tuberculosis, on what data may one predicate a prognosis of arrest or of death? It would be well at once to define what should here be noted in the word "diagnosis". In its use, as applicable to the subject in hand, it must go far beyond

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, June 6, 1922.

finding a pulmonary lesion or finding the bacilli in the sputum. Just as in making a prognosis for a cardiopath there is nothing whatever attained by saying that the patient has heart disease. That might range all the way from a mitral leakage of mild degree to advanced myocardial degeneration with anginal symptoms.

In pulmonary tuberculosis, then, what facts should we have before us when we attempt to foretell the outcome of the case?

The following features should receive attention and conclusions reached, as far as possible—being questions that can be answered more or less satisfactorily at the first or at most after two or three examinations—making use where possible of information furnished by x-ray plates. I reserve for later remark impressions that can only be gotten after more or less prolonged observation:

1. The extent of the tuberculosis process.
2. The nature of the anatomical changes—with particular reference to the healing process.
3. The chronicity of the case. How long has this patient had tuberculosis?
4. The range of the temperature.
5. The pulse rate.
6. Loss of weight.
7. The functioning of the digestive tract.
8. The presence of other diseases such as diabetes, arteriosclerosis or additional tubercular pathology.

Beside these there are certain incidental factors that may be very important; chief among these are the patient's financial status, and his willingness to cooperate in his main business in life—getting an arrest of his trouble.

It will be recognized at once that the above data may vary much in the certainty with which they can be secured—and vary widely in different cases. How long an individual has had tuberculosis, for instance, will often be impossible of proof and none of us so skillful as to be able to speak with assurance as to the extent to which a lung is involved.

Taking up item No. 1 first—namely, the extent of involvement of the lungs, we find it, in the matter of making a prognosis, inextricably bound up with the second—the character of the anatomical change and with the third—how long the disease has existed. The same extent of involvement in an acute case—say also with fever and with rapid pulse is much more serious than in lungs that have been the seat of tubercles for years, have had many ups and downs and always somehow the healing—fibrotic process gets, for a while at least, the upper hand. In the one case we realize the extent of the disease is considerable for so short a time and with the other features so apt to be present we give a very guarded, if not hopeless prognosis. In the other the patient has already shown great recuperative power and we can more reasonably hope that the day will be with the attacked rather than the attackers. It is the very acute cases of pulmonary tuberculosis that one is often least prepared to say, from physical examination, just how much lung tissue is involved. The broncho-pneumonic forms may be rapidly fatal and our best guide in making a prognosis is not what we find in the lung but the constitutional symptoms, fever, pulse and wasting. A less acute case even may show a rather limited area of positive involvement as made out by auscultation or other method, yet the same constitutional features convince us that tubercles are forming over a large lung area. The chronic case, on the contrary, may show marked apical retraction, dullness, voice changes, scattered rales; in short wide spread and well defined changes, but we can reason from this very chronicity and from the mildness of the

symptoms, the well functioning alimentary tract, that he can hope for months or possibly years of life. The chronicity even without the aid gotten from the absence of high temperature and rapid wasting is often enough to convince us that we are dealing with a more favorable type of case. The very fact of chronicity carries with it the assurance that the healing process has often prevailed. We know that caseation and ulceration mean rapid progress and death unless the process of fibrosis gets in its work. One lung may be largely rendered useless by progressive fibroid changes and yet the patient enjoy a fair degree of health. After all then it is not so much the extent of lung changes that furnish us with data for a prognosis as the character of those changes and in establishing the character of the changes the time element is all important.

We are accustomed to make much of cavities, though they are not present every time they are thought to be—but cavity formation by no means warrants a gloomy view. Autopsies will often show cavities that have undergone shrinkage, whose walls are very fibrous and with a smooth membrane. Many cases of fibroid phthisis will show them. Such cavities teach us how very resistant the body may be to tubercular invasion. Even in the rather acute cases there may be a subsidence of activity after cavity formation and the patient may live a long time.

It is not intended by what I have said to convey the impression that a good prognosis can be given in extensive bilateral tubercular invasion of the lungs. Nor indeed in any case of bilateral disease—unless there are at the same time marked evidences that the process is not highly infective and that the agencies for resistance are fully functioning. I only insist that the extent of the disease alone is a poor guide to the length of time that a tubercular may live. It is assumed here that the clinician has availed himself of the aid given by the x-ray picture in establishing the extent of the involvement.

The second item—the anatomical changes present in the lungs, may be fairly easy to grasp but their value in prognosis will be found to depend largely on such other features as the temperature, pulse, loss of flesh and strength and the digestive organs, and their response to

rest. Acute or sub-acute development of consolidated areas with evidences of softening, high fever, etc., seem naturally to carry a grave prognosis. Here we can visualize infiltration with tubercles, patchy or larger pneumonic areas, ulceration and we forecast the future accordingly. But sometimes we are wrong. Eight years ago, I saw a 19-year-old girl, too much fat, poor general endurance and color. She had an afternoon temperature of 103, pulse 110, evidences of solidification in a good portion of left upper lung and abundant bacilli. The history suggested a few months as the duration. It took four months in bed to bring her temperature to normal. The 103° fever lasted six weeks. She is living today about as well as she was four months after treatment began. Marked evidences of pulmonary disease exist and possibly some activity and she will probably yet succumb. But at that time I should have taken no stock in a prognosis of two years for her. The gloomy outlook not being based chiefly on the extent or even the conceived nature of the lung changes as made out by physical examination, but on the high temperature and rapid pulse. In the Saranac statistics only 56 per cent of discharged patients with a history of bacilli and spitting of blood and classed as moderately advanced are reported as dead 16 years later. Twelve per cent of the advanced cases were still alive. In these statistics, however, as published no report is made on the temperature, pulse rate, loss of flesh and digestive capacity but the report is apparently based on the extent of anatomical changes and such factors as the presence of bacilli and the spitting of blood. If the report had been based on chronicity and on symptoms rather than on an anatomical basis, or rather a basis of physical examination, different figures would probably be shown.

I may insert here another interesting item of Saranac statistics. In one group of 174 deaths 20 years after discharge, tuberculosis was the cause of death in 9 out of 10. In another group of 677 deaths, occurring 10 to 19 years after discharge 89 per cent died of tuberculosis. One would almost infer from this that tuberculosis immunizes against other diseases and that if one is once clinically tuberculous he stands a ninety per cent chance to go that way though his passing may be long deferred.

Apart from the nature of the pathological changes and their extent and the greater or less duration of tuberculous disease there are many other factors of importance, none of which, however, can be entirely dissociated from their anatomical features: Referring first to the temperature. It is fair to assume that the persistence of fever means bacillary activity and if the temperature remains high there is in all probability extension of tubercle areas, caseation, pneumonic spots and perhaps ulceration. And if after a few weeks or months of rest the temperature does not tend to normal a correspondingly bad prognosis is justified. Not that one can predict with any assurance the length of life but he can fairly assume that arrest will not take place. The slow decline of fever also affords a good basis for predicting renewed activity if proper care is not persisted in. The behavior of the temperature under proper regimen is so variable and so impossible to forecast that it furnishes one of the strongest reasons why we should not try to make any sort of prognosis until the patient has been under observation for some time.

On the other hand a low temperature does not always mean a favorable prognosis. There is a class of cases of long standing and extensive involvement that along with poor digestion and low vitality may run a temperature rarely above normal and yet have not long to live. These usually have a marked subnormal morning temperature and a fast pulse.

The rate of the pulse is of some value in prognosis but I would not like to give it a very definite status. The young woman previously referred to has had a pulse of more than 100 for the 8 years in which she has been under my observation, even with a normal temperature. The amount of loss of flesh a patient may have incurred is at times a good, at times a very poor item in its prognosis. Marked loss of flesh is very apt to be associated with considerable fever and rapid pulse or with poor digestive capacity or all three, and in a general way affords good ground for a forecast. Yet, here again, much depends on the regimen under which the weight has been lost. Febrile patients, leading a life of activity may also develop a poor appetite and poor digestion with consequent rapid loss of flesh. Put such patients at rest in the open and it is often observed

that the temperature declines rapidly, the appetite returns and loss of weight comes to a halt. Here again one must emphasize the futility of attempting a prognosis until the patient has been put for a week on proper management and the effect of it observed.

I shall not dwell at length on the value of a good digestion. In many ways it is the key to the situation. Without at least fair digestion we can not look for arrest. But there are many cases of pulmonary tuberculosis that no amount of digestive capacity can bring to a successful termination. The character of the infecting agent or the physical conditions favoring its spread are beyond the patient's power to resist. But whoever does anything, by medication or otherwise, to destroy appetite and digestion is taking from the tubercular his best property. We have happily outlived the days of nauseous cough mixtures and now realize that fresh air and mental and physical rest do more for the appetite than all the hypophosphites and other tonics.

A history of spitting of blood according to the Saranac statistics has very little bearing on the prognosis. In a sense hemoptysis has an element of good fortune in that it may bring a patient to the doctor and to a diagnosis earlier than would otherwise have been the case.

Pulmonary tuberculosis may in a general way be said to have a bad prognosis in children, in negroes, or aborigines, in those already the victims of other disease, or other tubercular lesion, in the careless and obstinate alcoholic, and those presenting various other features pathologic, temperamental, financial.

By way of briefly formulating the idea I wish to present I shall say that we must observe a patient, if possible for some weeks and be guided in prognosis by

1. The extent, character and chronicity of the disease.
2. The readiness with which fever and loss of appetite are overcome.
3. The willingness of the patient to play the game.

And even then we will be surprised to see how some of our bad prospects survive and how others succumb sooner than we had anticipated.

I feel sure of two things in the fight against tuberculosis:

1. We are prolonging the lives of the clinically tuberculous.
2. The general campaign for better living conditions is keeping many people with quiescent lesions from breaking into the clinically tuberculous group.

WHY PULMONARY TUBERCULOSIS IS NOT EASILY RECOGNIZED.*

W. A. OUGHTERSON, M. D., NASHVILLE.

1. Perhaps the commonest cause is, we do not look for the disease.

2. In many cases the complaint on the part of the individual is such as to make one think of things quite remote from the lungs.

3. I think we all have some very much cherished ideas that almost demand that we have some one or two signs or symptoms present in every case before a diagnosis is fully or in any wise justified.

When one considers there is no subjective or objective sign caused by tuberculosis that may not be caused by other agents, then it becomes difficult in many cases to draw a con-

clusion. Especially is this true where business interests and residence changes are involved, not to mention the possibility of a life.

Another cause I believe we are all guilty of is careless history taking. We fail to elicit information that will lead us to investigate along the proper channel.

Another cause: some patients will withhold information that would lead to a proper investigation. Still another reason: the signs and symptoms may be out of all proportion to any demonstrative pathology.

I am quite sure we have all had experience with cases in which there were chills, fever, sweats, great prostration and no signs. Still other cases present evidence of widespread

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, Oct. 3, 1922.

involvement of the lungs in which the general health seemed but little impaired.

Perhaps we may have a wrong conception of the pathology at times.

While the formation of the tubercle is the same the world over, the resulting pathology differs; perhaps the earliest change is the hyperemia. This may be followed by ulceration, caseation, or general or local fibrosis or general miliary tuberculosis.

The hyperemic fibroid and miliary forms are perhaps the most difficult of recognition by physical signs.

It is my judgment that of all the methods at our command, the history is the most significant thing in the greatest number of cases, always keeping in mind that the outstanding symptoms may be entirely remote from the respiratory system. As example, indigestion "hyperchlorhydria," colitis, generally resembling the mucous variety, headache, simple fatigue, unexplained visual disturbance, as dilatation of pupils and inequality of the pupils, neuritis and pain in remote parts of the body, anemia.

Then the group of symptoms we all recognize, patients and all, loss in weight loss in appetite, elevation of temperature especially evening temperature, quick pulse, moist skin, anemia, cough, chest pains and pleurisy with or without effusion.

I might add here from what I can gather from the present day view barring effusions from streptococcus infections, heart and kidney, all of which can be determined in a few moments by examination of the fluid. We are going back to accept the view held by Osler many years ago. 87% of serous effusions where streptococci, heart and kidney have been eliminated, have proven to be tubercular. Hemorrhagic are 98% malignant, perhaps barring sarcoma which is a rapidly recurring serous effusion.

Hemoptysis. By hemoptysis I do not mean sputa streaked with blood like we see in pneumonia, bronchitis, pharyngitis, gingivitis, nasal bleedings, but the coughing up or clearing the throat of a quantity of blood representing half a dram of half a cupful or more from out of a clear sky. Barring heart lesions this means 99% tuberculosis.

Strange to say signs in the lungs frequently are not found at this stage where hemorrhage

is the first sign of impaired health. I do not recall ever having found Koch's bacilli in bloody sputa but a few times. Men have reported them frequently, I rarely found them. Bleeding from varicose veins of the throat belongs in the same class as rooster teeth.

I should like to speak of emphysema and tuberculosis, but it seems that the pathologists are upsetting our clinical picture of emphysema and the disease, whatever it is, perhaps should be thought of in different terms than we have in the past.

I can not keep from thinking that emphysema is a lung with over distended air cells that have lost their elasticity and are unable to recoil and expel the inhaled air, together with barrel chest and woody resonance and distant or much impaired vesicular murmur, dyspnea, impaired heart function. Still the pathologist is telling us at post-mortem these things are not demonstrated.

I am therefore waiting for some further report. Of course cases are constantly encountered by the pathologist in which six to ten or more alveoli are ruptured and demonstrated as one compartment. During this process it would seem that much blood might be expectorated by the rupture of vessels between air cells. Still we rarely if ever see any more than blood streaked sputa during an acute attack of respiratory infection.

In approaching a given case for lung examination one should always keep in mind that the lung in health has three normal physical attributes namely, volume, density and extensibility. Some of our most competent observers will at once pick out some one of these attributes and say the lung is impaired—and the earliest and most significant sign in my own experience and association with other men, watching their work in an endeavor to learn some thing of their methods, at a glance could point out the lesion's exact location; another will catch it by percussion. Still another by auscultation. Percussion in my opinion is well advanced tuberculosis.

You are all familiar with Pottenger's theory of the vegetative nervous system. I was permitted to see him examine patients, some for the first time, some had been examined before. I was allowed to examine after him, I must say his observations were worthy of any man's careful thought.

I would therefore say, one should not be too dogmatic on just what particular sign is the most significant and should be most relied on. From my own observation and experience, I should rather rely on the patient being stripped and carefully inspected in a good light. Second auscultation from the physical standpoint, after the history has been carefully elicited.

In one case it may be impaired excursion, another impaired expansion, still another the disease has progressed without subjective symptoms; perhaps an area of muscular atrophy, contracted lung or heart pulled out of place by some old quiescent lesion of the fibroid variety, and this I consider of the most importance of all. They have long periods of quiescence, stand an excellent opportunity of cure or arrest if given a chance, go on for years dragging around infecting other members of the household who are much less fortunate than the father or mother but go down and die of the ulcerating form and still the old chronic lives on.

A very valuable sign is cough which is often absent and history of past cough but each spring and fall go through a period of loss of weight and appetite and general aching; as a rule malaria is the diagnosis. They regain their appetite and some weight for the time.

In some cases the physical signs are out of all proportion to constitutional symptoms while in others the symptoms are out of all proportions to the physical signs. This is especially true in early cases.

Benign and malignant tumors, aberrant thyroid, enlarged lymph glands, persistent thyrmus, aneurism, pyogenic infections and syphilis of the lung all must be thought of in addition to cardio vascular disease.

Much has appeared in American literature in recent years on syphilis of the lungs. Personally (I am open to conviction) I must say that up to this time I have not proven such a diagnosis and I believe we need much more investigation along that line to confirm some of the claims.

Some years ago I took occasion to look over the available literature on the subject of pulmonary syphilis. Very little was found in American literature. The British had pub-

lished some excellent data. To summarize their findings in a few words, every case without exception, this being based on postmortem findings, revealed the one fact that syphilis was found to be a disease of the root of the lung, always beginning either in the trachia or a primary bronchus ulcerating through, frequently causing sudden death. Where the individual lived the process was followed by inflammatory infiltration and later much fibrosis.

The significant point or points was always one lung and beginning at the root,—never found in the periphery; while tuberculous practically always begins in the periphery most commonly at the apex. Unless very early arrested both apices become involved. It is quite true the change in one apex may be slight, still both will show some change. In many cases the chief pathology seems to be in the upper part of the lower lobe. Still the apices are rarely clear and free from some change. Primary physical signs at the base in the absence of some evidence of disease higher in the lungs rarely if ever proves to be tuberculous.

Primary hilus tuberculous seems to me a very difficult diagnosis to demonstrate or prove.

Tumors can very often be demonstrated with sufficient accuracy so as to classify them in many cases. On the other hand some of them are attended with much difficulty, this being especially true in the early cases.

The cases I have erred in, like all others, have taught me the most. There have been several outstanding impressions in these cases, not common to tuberculosis, namely, the cough has been attended with evidence of pressure, the strident or brassy cough. Second, asthma for the first time in the individual's life, effusions either bloody or rapidly recurring in the pleural cavity.

These cases are still further complicated if they first present themselves at a time when respiratory infections are prevalent, augmenting the trouble by some respiratory infection, which in many cases seem to be the first symptoms that attract attention.

In some cases malignant changes seem to develop so definitely following respiratory infections it seems reasonable to assume that the infection has at least laid the foundation of certain cancers, as it is claimed by some investigators are due to germ infection. Perhaps they may be malignant from the beginning. Aneurism may be included in the tumor group; where we have all subjective and no objective signs as in the case of thyrotoxicosis.

It was thought that when Dr. Goetch announced his test, together with the estimation of the metabolism rate, the two diseases could be more readily distinguished.

Perhaps the more difficult cases to differentiate are those resulting from some of the streptococcus group.

Here we are sometimes forced after all of our resources have been exhausted to admit we do not know.

The mild thyrotoxicosis still holds our attention. In making observations it has been rather striking the constant hot hand of thyroid disease as compared to the cold moist hand of tuberculosis.

At Saranac the physical sign most stressed is rales at the apex. Bonnie lays much stress on the history and x-ray. Pottinger lays much stress on the muscular atrophies resulting from changes through the vegetative nervous system resulting in muscular atrophies. He claims this does not result from other forms of infection. As I have already stated, there is no sign or symptom produced by tuberculosis that can not be produced by other micro-organisms.

There are few points worthy of consideration that are very significant and rarely caused by other germs namely, hemorrhage out of a clear sky, pleurisy with effusion in which gravity and micro organisms rule out cardio renal and pyogenic infection.

The infection rapidly spreads to the other

apex in tuberculosis, while in low grade pyogenic infections it is rather unusual for the infection to spread after the initial onset. Finding tubercle bacilli in the sputum: this latter finding generally means advanced tuberculosis and should not be waited for, still the finding makes a very positive diagnosis. The frequently recurring respiratory infections spring and fall attended with impaired health is very significant.

The white raphe, lack of fat in the hard palate, strutted anemic throat, is a very common finding. X-ray findings have proven very valuable in my work. Inasmuch as I have been closely associated with Dr. McClure naturally he has done the bulk of my chest work. I have asked for independent reports based on x-ray only. While I am unable to give tabulated figures, the reports have been so uniformly in keeping with other findings I have come to lay much stress on the x-ray.

I have tried out the various forms of tuberculin tests and I must say I need much more experience to lead me to conclusions not discounting their value. Still I must admit, it has been an absolute failure in office work and of doubtful value in hospital work.

As a final statement I am able to demonstrate many cases of pulmonary fibrosis that I believe are tubercular in origin but undecided as to whether the lung is playing any part in the impairment of the health of the individual seeking relief.

I believe it very important that every patient should be taken into our confidence and a full explanation made of the many difficulties that beset us in our efforts. Those that are not willing to co-operate and be patient should be referred to the other fellow. Dogmatic and sweeping statements about pulmonary tuberculosis are only made by men inexperienced or lacking in veracity.

CONGENITAL ABSENCE OF THE RECTUM WITH A COMMUNICATING SINUS BETWEEN THE BOWEL AND THE URINARY TRACT.

O. S. McCOWN, M. D., F. A. C. S., MEMPHIS.

CASE REPORT.

MALE child, born by normal labor on November 19, 1920. Weight six pounds, and normal in every way except for the defects described below.

During the second day following delivery, the nurse noticed that there was a discharge of meconium through the penis, and that the bowels had not moved. The child was also vomiting. The meconium was discharged independently of the urinary function, which was apparently normal. When referred to me, I found the meconium coming through the urethra, the abdomen distended, the child vomiting and clearly suffering from intestinal obstruction. There was visible and audible peristalsis but no palpable mass. Examination of the perineum showed a complete absence of the anus. There was no dimple where the anus should have been, and no bulging.

In view of the fact that the meconium came from the urethra between the acts of micturition, unmixed with urine, and in small amounts, I concluded that the communication between the bowel and the urinary tract must be small, in the deep urethra, and not in the bladder. I thought this would mean that the bowel came down to the perineum and that it could be easily reached through a perineal incision. The operation proved that I was right in my first conclusion, but wrong in my last.

A perineal operation was decided on, and done with ether anesthesia, when the child was forty-eight hours old. An incision was made through the skin and fascia in the middle of the perineum. No rectal pouch was found, so by blunt dissection the incision was carried up along the sacral curve to a point slightly below the sacral promontory. Here a soft bulging mass was found. The distance from the skin to this mass was two inches. The surrounding tissues were gently pushed away from this mass as thoroughly as possible without opening the peritoneal cavity. An aspirating needle was pushed into the mass and meconium aspirated. After withdrawing the aspirating needle, a tro-

char was introduced where the needle had been, and as much of the contained meconium as possible evacuated. The bowel was then incised at this point of puncture, and the edges of this incision brought down and sutured to the skin edges of the perineal incision. Four chromic gut sutures were used, one in front, one behind, and one on either side. The distance was so great that these sutures were on considerable tension, but they held very well. Nothing was seen of the communicating sinus during the operation.

There were three vital questions which troubled me concerning the probable future of the patient. The first was; what would become of the sinus between the bowel and urinary tract? The second, would the scar tissue close the anal opening I had made? And the third, would the child have control of the bowel contents?

There has been no discharge of meconium or fecal matter from the penis since the operation.

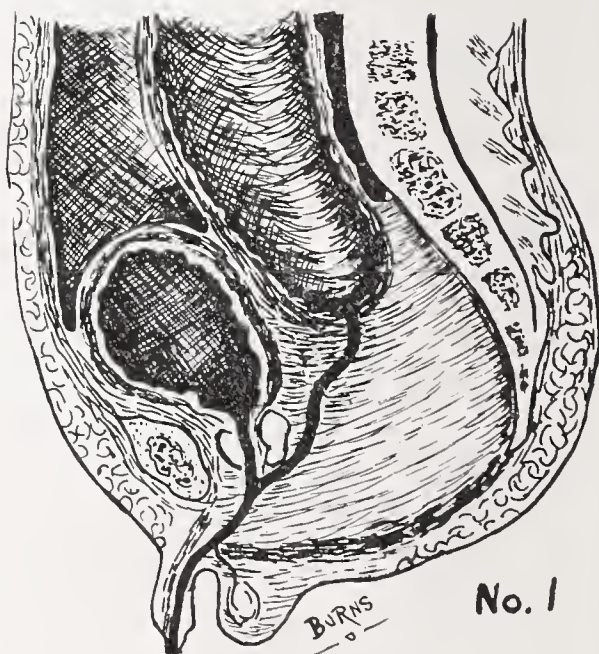


Fig. 1.

Diagrammatic drawing made by Dr. Coleman Burns, showing condition at child's birth.

There was much fibrous tissue about the opening at first in spite of frequent dilatation with Kelley's female dilators, and when the child was nine months old, the anal constriction was so great I cut through the surrounding ring

of tissue. There has been little tendency to contract since this was done. Much of the scar tissue has been absorbed. The anus has not been dilated now in ten months and the opening is not contracting.

The child has perfect control.

The mechanism of the sphincteric control was of much interest to me. So in February 1922, when the child was twenty-seven months of age, I had him brought from his home in Arkansas for an examination. The anal opening would readily admit the index finger, (no dilatation had been done in seven months), the tissues about the anus were soft, and the canal felt smooth inside. No sphincteric contraction could be felt on the examining finger. The mucous membrane lining the canal could be seen joining the skin at the anal margin.

A rectal tube was inserted, a barium enema given, and x-ray pictures made. It was very

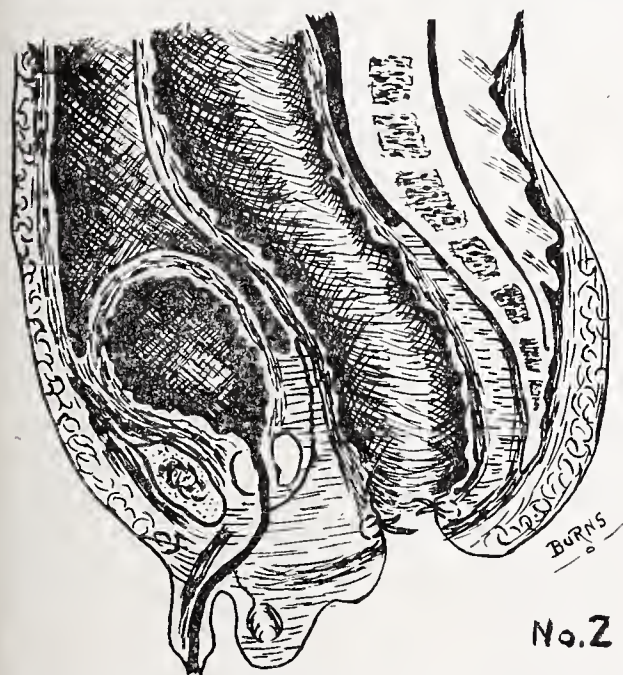


Fig. II.

Drawing by Dr. Burns, showing condition after operation.

difficult to keep him still enough to make a good picture but finally we got one good one.

This picture showed the sigmoid, the transverse colon, and cecum full of the barium mixture. The sigmoid was larger than normal. The barium showed the lowest part of the bowel to be almost on a level with the sacral promontory; leaving, I should judge, an inch or more of space between the anal margin and the lowest part of the barium shadow. The examining finger showed that the canal was en-

larged between the barium mixture in the bowel and the anal opening. We tried to inject this space and get a picture of it, but the child was impatient, and we had no success. My interpretation of the picture is that there was an entire absence of the rectum, and that the sphincter now present is only an exaggeration of the normal sphincter which is usually present in some degree at the reto-sigmoid juncture.

The presence of this sigmoid sphincter and its importance are discussed by W. J. Mayo, (Surg. Gyn. Obs. 1917, XXV, 616-621) who refers to the anatomical work of Reeves. Reeves found this sigmoid sphincter present in eighty per cent of forty-six bodies dissected. Dr. Mayo also gives much clinical evidence of its presence. The control in the case of this child is very complete. After the injection of the barium, the abdomen was massaged vigorously without any leakage during the forty minutes we worked with him. The enema was voluntarily discharged later.

We studied the case carefully with the fluoroscope, trying to find some evidence of the sinus which had communicated with the urinary tract, but there was no sign of it visible. I



Fig. III.

Print from x-ray picture made when child was 27 months old, showing barium mixture retained by sphincter, which is well above anus.

think this was severed from its connection with the bowel being brought down below it when the anus was made.

The child is wonderfully bright and active. He has grown and developed normally.

THE PHYSIOLOGY OF MENSTRUATION.

J. F. GALLAGHER, M. D., F. A. C. S., NASHVILLE.

THE SEX impulse is said to be second only to that self preservation. In so far as the genus homo is concerned it would seem that this general assertion applies only in the average for there are instances in history and in the more intimate experiences of every individual where life has been held secondary to the impelling influence of the sex impulse, be the latter base or pure. Be that as it may, there can be little doubt that from the very dawn of civilization and before, the sex impulse in one form or another has been one of the great dynamic forces that have spurred man on to what has been called this, the higher civilization.

It is little wonder then that a function of the female sex organs so dramatic as the periodic discharge of bloody material, which we call menstruation, has created so much speculation and engendered so much superstition. In the earliest writings of which we have any knowledge we find reference to this phenomenon of the female reproductive organs. Thus, Hippocrates looked upon menstruation as a periodic purging of the blood of impurities and Pliny refers to it as "a fatal poison, corrupting and decomposing urine, depriving seeds of their fecundity, destroying insects, blasting garden flowers and grasses, causing fruit to fall from branches" etc. All through the ancient writings baneful effects are attributed to contact with menstruating woman or of the menstrual blood and the three times the word "menstruos" is mentioned in the Bible it is in an unclean sense.

However, a few of the ancient writers did not believe that the menstrual blood was poisonous and we find Aristotle saying that "it was as pure as that which flowed from any wound." In fact throughout the ages, to the menstruating woman and the menstrual blood every thing that is good and every thing that is bad has been attributed. The Greeks and Romans believed that a menstruating woman could quiet a tempest. By others menstrual blood was believed to cure every

thing from headache to hydrophobia. Similar beliefs and superstitions are found among the uncivilized tribes of Africa. Strange and weird customs in regard to the menstruating woman were practiced among the North American Indians such as isolation and peculiar painting of their faces. And it may be that the euphemisms applied to menstruation at the present time have grown out of the ancient belief of the disagreeable nature of that function.

Throughout the animal kingdom there is a periodic sexual activity but there is nothing that approaches a periodic discharge from the genital tract in the group below the mammals, for they have no uterus. However, among most animals the change of pigment or plumage or the elaboration of peculiar odors indicate the season of rut or "estrus." Estrus or rut as a matter of fact is divided into two stages: first; pro-estrus, in which there is congestion and swelling of both the internal and external genitalia, accompanied by a discharge from the genital tract which is often tinged with blood. This is held by many biologists to correspond to the menstrual flow of woman. Second; estrus proper which is the period of sexual desire. This analogy is held to obtain in woman who is said to have the greatest sexual desire just after the menstrual period.

In woman the sole source of menstruating blood is from the endometrium proper. The lining membrane of the cervix does not participate in this function. A review of the histology of the endo-cervical mucous membrane as compared to that of the endometrium would lend credence to this statement. The cases where menstruation persists after a supra-vaginal hysterectomy are most probably due to the fact that a small ring of endometrium has been left behind and that menstruation arises from this. In other words the amputation of the uterus has in reality been made above the internal os.

While it has been claimed by some that the Fallopian tubes participate in menstruation, convincing proof has never been put forth. Blood has been found in the tubes during the menstrual period and a few cases have been reported where a sinus communicating through the abdominal wall with the lumen of the tubes discharged blood at each menstrual period, but those cases that have been studied histologically show no changes in the mucous membrane of the tubes or changes in the blood vessels of the tube that would indicate that the blood had its origin there. The presence of blood in the tubes at the time of menstruation is accounted for in the belief that it flowed into the tube from the cavity of the uterus.

The basis for any intelligent study of the function of a tissue or organ is found in a correct knowledge of its structure. What then is the histology of the endometrium? The answer to that question can not be given categorically for the mucous membrane of the uterus proper is undergoing a more or less constant change during the menstrual or inter-menstrual period.

It was a lack of knowledge of this perhaps that caused pathologists in the no distant past to give almost innumerable types of endometritis,—a condition we know now to be of very rare occurrence. In 1908 Hitschmann and Adler published an epochal work on their study of the uterine mucosa of fifty-eight women at various periods of the menstrual cycle. They demonstrated a definite relationship between the changing histology of the uterine mucosa which corresponds to the clinical cycle of menstruation. This changing cycle they divided into four periods; 1st. The Post-menstrual stage, embracing a few days immediately following the cessation of the flow. 2nd. The Interval Stage. During this stage the endometrium is undergoing a steady but gradual development. 3rd. The Premenstrual Stage. At this time, which is from a few days to a week before the next menstruation, there is a sudden development of the endometrium, the glands becoming convoluted. 4th. The Menstrual Stage, which corresponds to the actual flow.

Ten years previous to the publication of the work of Hitschmann and Adler, Gebhard published a work on the endometrium in

which he divided the cyclic changes in the endometrium into three stages viz; 1st. Pre-menstrual congestion. 2nd. External Hemorrhage and 3rd. Post-menstrual regeneration. In the fourteen years since the publication of Hitschmann and Adler's work many valuable contributions have been made to the literature on this subject, especially Schroder, but the four stages of Hitschmann and Adler and their description of the histology is held to be the correct one.

The most conspicuous microscopic change in the uterus and adnexa during menstruation is the engorgement of the blood vessels. The uterus is slightly enlarged and bluish-red in color. The greatest thickness of the endometrium within the range of normality, according to Dorderlin, is 7 mm.

de Graaf first described the follicle which bears his name in the year 1665, and Baer in 1827 discovered the human ovum. Ever since the latter event there has been much speculation and discussion as to the relationship between ovulation and menstruation. In 1839 Gendrin promulgated the theory that menstruation was dependent upon ovulation. The same relationship was asserted by Pflüger in 1865 and he advanced a theory that was held in vogue for quite a long while that the ripening of the follicle produced a stimulus which caused congestion of the uterus and its adnexa and which resulted in menstruation.

It is quite commonly held today that there is a relationship between ovulation and the formation of the corpus luteum, and the occurrence of menstruation. More particularly, menstruation is said to be dependent upon the formation and regression of the corpus luteum, though this has never been absolutely proven.

While menstruation may be dependent upon ovulation it is certain that ovulation may take place without menstruation supervening. Attention may be called here to the fact that pregnancy may take place before puberty, after the menopause and during the amenorrhea of lactation. Likewise pregnancy may take place during the amenorrhea of tuberculosis or a like debilitating disease. Moreover, in the study of comparative physiology, which has lent much to our knowledge of this subject, it has been quite conclusively shown that there is no relationship between ovula-

tion and estrous or rut in the lower animals.

The histological studies of Meyer and Ruge of the changes in the corpus luteum checked against the cyclic changes in the endometrium lend the most convincing evidence of the influence of the corpus luteum on menstruation. They have proven that ovulation takes place either in the post-menstrual or interval periods of the menstrual cycle, and that a mature corpus luteum is found just before menstruation. Miller's studies corroborate the work of Meyer and Ruge but he placed ovulation on about the nineteenth day of the menstrual cycle.

There are other modern views of the cause of menstruation that should be considered. While all are agreed that there is a hormone elaborated in the ovary that causes this phenomenon and which acts through the blood, there is a variance of opinion as to which histological structure is responsible. Thus, Marshall believes that this hormone is elaborated by the follicular epithelial cells or the

stroma rather than the corpus luteum. Theilhaber believes that the internal secretion is produced by the ripening of the ovum itself. In 37 of a series of 40 cases operated on by Halban in which he excised the corpus luteum, uterine bleeding appeared from two to four days after operation and that in practically all of these the menstrual period occurred four weeks afterwards. This has led Halban to conclude that menstruation is brought on by ovulation rather than the corpus luteum.

To this rather chaotic state of our knowledge of the cause of menstruation we have added the varied influences of the other glands of internal secretion of the body. The principle endocrine glands that have an influence on menstruation are; the thyroid, parathyroid, pituitary, suprarenal, thymus pineal body and spleen. So little is really known of the function of these glands that a consideration of their relationship to the function of the ovary and the resultant influence on menstruation would be nothing more than speculation.

RADIUM IN THE TREATMENT OF MENORRHAGIA AND METRORRHAGIA, WITH CASE REPORTS OF FORTY SUCCESSFUL CASES.*

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THE subject under discussion does not include the excessive menstruation and hemorrhages that we have from uterine polypi, fibroid tumors, cancer, of the cervix and body of the uterus. It does not include the definite class of uterine hemorrhage that we find in women due most often to hyperplastic endometritis of long standing, where medicines have failed and one, two and sometimes three curettages have failed as well. The conditions are entirely chronic in nature and not infrequently are found in young unmarried women. The hemorrhages in these cases may be so persistent that the patients when presenting themselves for treatment

are often almost bloodless, extremely weak, confined to the house, or to the bed, and are not strong enough to withstand major surgery (hysterectomy.)

The treatment with radium, to be outlined later, of these particular cases, is so simple, so safe and effective, that major surgery, as a therapeutic agent, should not be considered.

In the past five years we have treated in our clinic forty of these cases, and in not one of them have we failed to give relief. It was necessary in some of the patients to apply the radium a second and even a third time before the desired effect was obtained. The cases presenting themselves for treatment are divided into two groups; those that are at or near the menopause, thirty-five to forty years

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of age or older; and those from twenty to thirty-five years of age, the younger group.

The treatment of these two classes of patients while similar, differs materially in regard to the application, amount of radium used and time applied. The reasons for the difference in technique in the two groups is obvious; for while the pathology in the two classes of cases may be the same or quite similar it is very important, if possible, that the menstrual function in the younger class of women be preserved. If the patient is forty years or more of age, you may use sufficient radium to check the excessive, or too frequent flow, at one application and if you so desire, you can stop the flow entirely. The patients in the older group when so treated do not have the nervous manifestations that the woman in the younger group would likely have following such an application.

In treating women under thirty-five years of age for menorrhagia, the treatments should be of short duration, with moderate amounts of radium. One should feel his way along—repeating the application of radium according to the results obtained—preserving the normal menstrual function. It is surprising how satisfactorily this can be done if you proceed as outlined above.

The first case in this group treated at our clinic, now over five years ago, had amenorrhea for five months following the treatment, but has menstruated regularly every month since that time. She was twenty-six years of age, unmarried; clerk in a drugstore, and had been curetted twice in the previous four years for menorrhagia and when she came to the clinic she was so weak and anemic that she could scarcely walk. The first application of radium was not sufficient to effect a cure; the second application given five weeks later produced amenorrhea for five months. This case shows the refinement of technique in the treatment of this younger group of women.

In selecting cases with menorrhagia and metrorrhagia suitable for radium applications, it is important that the history of the case, the aetiology, symptomatology, pathology and differential diagnosis of the conditions producing the menorrhagia should be thoroughly considered. It is our custom to take a complete history of each case with

laboratory and x-ray findings; work out the case thoroughly, and if we find that surgery offers a better chance of cure we operate; if radium is applicable, apply it; if surgery and radium combined would obtain the best results use both.

The histories of the cases under consideration usually present the following conditions, they are chronic, not associated with fibroid tumors, polyps, cancer of the uterus, sub-acute Neisserian infection, (complicated by pyosalpinx) cellulitis, ovarian cysts, etc. They are most often cases of simple idiopathic endometritis and metritis with normal or only slightly enlarged uteri; that bleed two or three times during the month, frequently throughout the entire month or over longer periods of time. All of these cases have had the usual therapeutic agents used for their relief and many of them have been curetted without success. The uterus may or may not be in normal position. The cervix may or may not be stenosed or lacerated; the perineum and vagina may or may not be lacerated. While we do not usually find an ulcerated cervix, with glairy thick mucus flowing from the cervical canal, that acute and sub-acute infections produce, there is usually a leukorrheal discharge present.

The endometrium is usually thickened—a condition of hyper-plastic endometritis. Microscopical examination of the endometrium shows an increase in the mucous glands of the endometrium, as well as in the hyperplasia and the lymphoid cells. This condition of the endometrium, if found constantly present at the menopause is quite significant and is nearly always followed by menorrhagia.

Technic of Treatment:

In young women under thirty-five years of age, especially those unmarried, where there is no suspicion of malignancy, the radium is introduced directly into the cervical canal and uterus without a preliminary dilatation, and necessarily without obtaining the scrapings from the inside of the uterus for microscopical examination. We feel quite safe in doing this, and have not yet had cause to regret it.

The patient is prepared vaginally as for an ordinary vaginal operation. There should be little or no pain in the introduction of

the radium. In a nervous patient we usually give a hypodermic of morphine one-fourth grain and atropine 1-150 grain one hour before the introduction of the radium. Fifty mg. of radium is then inserted into the body of the uterus and left from four to eight hours, in ordinary cases. The patient suffers no inconvenience or pain while the radium is in situ, and if she wishes she is allowed to go home as soon as the radium is removed. If the patient is very weak, it is better that she should remain over night and be allowed to go home the following day.

A second treatment is only given provided the flow at the next regular menstrual period is excessive. If it is only a little more than normal, and only a short time has elapsed between the giving of the radium and the return of the period, it will be well to wait for the second period following the application of the radium, and note whether the patient menstruates, and if she did, whether it was normal or not. If more than the normal quantity, and the length of time of menstruation is prolonged, a second application is given, the time and the amount being less than the first treatment.

Cases near the menopause,—(thirty-five years of age and over), on account of the possibility of malignancy, should be dilated and curetted, the scrapings subjected to microscopical examination. The radium is applied in these cases at the time of the removal of the scrapings. If the patient is at the menopause, the radium is left in place for a longer period. This is done to establish the menopause as well as to obviate the necessity of the second application.

Should the case prove to be one of early malignancy, there would be one or two procedures to follow; either large doses of radium over long periods should be used, or a hysterectomy should be done. The choice of the method used, would depend on the condition of the patient, and whether or not metastasis had probably taken place.

Case Reports—In reviewing the forty cases to be reported, we find from the records that thirteen of them were under thirty-five years of age, the remaining twenty-seven were thirty-five or over. The youngest patient was fourteen years of age. The oldest fifty-five.

Twenty-one cases received only one treatment, ten cases received two treatments, and nine cases received three treatments. The usual amount of radium used was fifty mg. The shortest length of time applied was two hours. The longest application was twenty hours. In this case the patient was well past the menopause and had been bleeding continuously over a long period of time, was very anemic, and it was decided to produce a permanent amenorrhea.

The cases have been followed up by personal inquiries and by letters to patients, or to physician referring the case, and in all instances have been relieved of the condition for which they presented themselves. It is possible that one or two cases may have relapsed, but the writer is not aware of it.

I have selected at random a few cases that I think may be of interest to report in more or less detail.

Case No. 1. (The history of this case has already been given.)

Case No. 2. Miss E. M. Age 31. Vocation, graduate nurse. Complaint, menorrhagia for four years, hemorrhage very profuse, lasting about two weeks. The bleeding spells occurred every three or four months at first, now getting more frequent. The present attack had lasted six weeks, she was very anemic and weak. Two years ago patient was curetted with temporary relief, trouble returning in six months. She was given two applications of radium, one month apart. Following the treatments, she did not menstruate for five months. Since that time, now four years, she has menstruated only slightly every month. When she came to us she had been nursing for six years and stated that for the four years previous she had only been able to work about half time. When seen last month she stated she has lost no time on this account since the treatments.

Case No. 3. Miss J. C. Age 14. School girl. Began menstruating a little over a year ago, periods had always been excessive and lasting ten days. When she presented herself for treatment she had been unwell for five weeks. She was very pale and languid. Vaginal examination revealed a small uterus, flabby, with a patulous cervix. Her red cells were 3,200,000 per c. mm. Haemoglobin 35%

Urine negative. Blood pressure systolic 108, diastolic 58. She was given one radium treatment of fifty mg, for a little less than five hours and told to return for examination in two months. A letter from her mother at that time stated "She is doing so well I want to know if it will be alright to bring her back later?" A second letter two months later, states that she is all right, menstruating normally and regular.

Case No. 4. Mrs. S. C. Age 48. Occupation housewife. Diagnosis: hyper-plastic endometritis. She stated that she had excessive menstrual periods for the past five years. That she would occasionally miss one month and when she became unwell, she would menstruate for a month or six weeks. When she presented herself for treatment she had been menstruating for six weeks and had been confined to bed on this account for the past three weeks. Her normal weight was 156 pounds. The last time she was weighed, which was before she was confined to bed, she only weighed 136 pounds. It was suggested that the scrapings from the uterus be taken and examined, but the patient refused to have this done as she did not want to take an anesthetic. She was given fifty mg. of radium intrauterine, for seven hours. Her physician was in three months after the treatment and stated that she had complete relief, had gained in weight and strength and was doing her own work.

Case No. 5. Mrs. H. S. Age 40. Occupation, housewife. Diagnosis, Metrorrhagia, most probably from hyper-plastic endometritis. The patient had a large flabby uterus, but there was nothing on physical examination to indicate malignancy. She was dilated, curetted and radium applied. The scrapings from the uterus showed chronic exudative and proliferative endometritis with marked hyperplasia. She was given two intrauterine applications of radium with relief of symptoms. The follow up report did not state whether complete cessation of menstruation had been established. However, this was immaterial, as she was over forty years of age.

Case No. 6. Mrs. A. S. Age 40. Occupation, housewife. Diagnosis: menorrhagia, also secondary anemia. The red cells were 1,605,000. Haemoglobin 45%. Marked anisocytosis and marked poikilocytosis with some nucleated

red cells. Temperature 100, pulse 100. This patient was so anemic and weak from loss of blood that she had to be brought to the sanitarium on a cot. She had been bleeding off and on for three years, would menstruate two or three weeks of each month. She was given two radium treatments, in all 450 m.g. hours. The hemorrhage entirely checked, following the second application of radium. The red cell count increased 1,000,000 cells per c. mm. during the first twenty days following the radium application. A letter from her husband at the end of three months stated that to all appearances she was normal and was able to look after her house work.

These few cases will give you some idea of the effects of radium in patients suffering from menorrhagia and metrorrhagia in this particular class of patients.

Dr. S. M. D. Clark of New Orleans, La., in a paper read before the A. M. A. at the Atlantic City meeting, reported the application of radium in fifty cases of menorrhagia and metrorrhagia caused by hyper-plastic endometritis and metritis at or near the menopause, with success in all of his cases.

Dr. John G. Clark of Philadelphia, in a symposium on radium, before the A. M. A. at the New York meeting, stated that in selected fibroid tumors, and uterine hemorrhage of idiopathic nature, radium was invaluable.

The work of Henry Schmitz, of Chicago, Kelly of Baltimore, C. Jeff Miller of New Orleans and a host of other workers throughout the country fully corroborates the statements of the above named gynecologists and surgeons.

In conclusion I want to state that radium is not in conflict with surgery, the x-ray or the ordinary therapeutic agents that are in use in the treatment of menorrhagia and metrorrhagia. It is an adjunct to these measures, in the treatment of all of the conditions in which menorrhagia is a symptom, and in that certain definite class of cases outlined above it is more nearly a specific than any therapeutic agent with which the writer is familiar.

Since writing the above I have had reported to me, by two physicians referring cases, a slight return of excessive flow in a case each. These cases will be given a second application of radium over a short period of time.

ACUTE MECHANICAL INTESTINAL OBSTRUCTION.*

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NO SURGICAL problem has been attacked by as many investigators from an experimental standpoint in an effort to arrive at the cause of death, as intestinal obstruction. In the past there have been many conflicting theories, but at the present time most of the men working in this field have accepted the proteose intoxication theory as practically proven. The point now in dispute is the origin of the poison and this has a very important bearing upon what we shall do for the patient. As stated above, all are agreed that the poison is a proteose and they again agree that this proteose is found in the obstructed bowel above the point of obstruction.

There are many theories as to the primary source of this toxic proteose but for our purpose in this discussion we are concerned only with two general sources; that is whether the toxic proteose is formed within the lumen of the obstructed bowel or whether it is manufactured outside and then excreted into the lumen of the gut.

It seems to me the theory of the formation of the poison outside the gut is the one that nearest explains the clinical phenomena observed in intestinal obstruction. A few of the important facts in support of this claim are:

1. No one denies the very low, if any absorptive function of the gut above the point of obstruction; in fact, the gut really assumes the role of excretion rather than its normal function of absorption.
2. If the toxins were formed within the gut, it seems to me that the lower the obstruction the greater the amount of toxins formed and the earlier death would ensue.

It is a well known clinical observation that the lower the obstruction the longer the patient survives. On the other hand if we accept the theory that the toxins are formed outside the gut lumen and the intestine above the obstruction assumes the role of excretion, the larger this area the more toxin it can excrete.

Also, if it retains any of its absorption function there is a large area for the absorption of fluids and fluids are always the vehicle for the elimination of toxic material, incident to body metabolism.

In low obstruction it is well known that vomiting is not so continuous as in high thereby permitting the intake of greater quantities of fluids. Should the toxins be formed within the lumen of the gut, the greater length of the gut involved the more toxins formed and as well the greater the amount of absorption which would be facilitated by the greater quantity of fluids imbibed due to the less continuous vomiting as stated above.

The experimental work of Bacon, Anslow and Eppler has verified the above. They have shown that the protein catabolism of body tissues are the source of proteose poison and that death occurs because of insufficient quantity of fluids. The waste products of protein catabolism are unable to be eliminated and deaths occur from what they term pseudourmia. Their proof of this is:

- 1st. That the non-protein nitrogen concentration of the blood continues to rise until death as it does in uremia.
- 2nd. Because dogs that were permitted to die from thirst presented the exact symptoms of the obstructed dogs.

They found the estimation of the non-protein nitrogen content of the blood to be a very reliable guide to the severity of the toxemia. Crile has recently been emphasizing the extremely important function of water in the preservation of life. It has also been observed that when the body tissues are deprived of fluids the protein molecule is much more rapidly broken down, also the epithelium of the kidney is impaired by the toxic material itself. A peculiar thing observed by Whipple is that proteose from various other sources does not impair the kidney epithelium as does the proteose from the obstructed gut. This produces the vicious circle, the lack of fluids as a vehicle, increased rate of protein cata-

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bolism and in turn impairment of the excretory function of the kidney which increases in direct ratio to the rapidity of the loss of body fluids increasing concentration of toxic products of protein catabolism. It is possible that perverted excretory function of the obstructed gut is a compensatory one that nature in her wisdom has provided for our preservation.

If the above theories and deductions at all approach the truth then it seems as though we have a good foundation upon which to erect our curative measures, but before we go further in that direction of treatment, I think it well properly to classify acute mechanical obstruction. All cases of obstruction do not die from protein intoxication alone and indeed it may not even be the primary but the secondary cause of death. I would divide acute mechanical obstruction into simple and complicated. The simple being those cases in which there is no or slight injury to the gut wall as for instance where the obstruction is produced by a very narrow band which is only constricting sufficiently to interfere with the flow of fecal contents without damage to the gut wall or blocking the lumen of the gut by tumors and gall stones. In this class death would be due solely to protein intoxication.

Under the heading of complicated would be the cases due to bands or hernial openings through which loops of gut have slipped or where a considerable portion of the gut wall is injured by adhesions to inflammatory masses. In this class of cases death would not result from proteose intoxication alone, but as above stated, proteose intoxication might be the secondary instead of primary cause of death. Since it is believed that the non-protein nitrogen content of the blood is a reliable guide as to the amount of intoxication, this would be modified by the severity of the complication present; for instance we know there is a definite mortality to intestinal resection and if we are forced to resort to this in the presence of protein intoxication it is entirely possible that death might be due primarily to the resection rather than the protein intoxication, also the mortality would be increased in resection cases in proportion

to the severity of the protein intoxication. Hence it becomes necessary for us to combat the proteose intoxication.

From the above premises we may say this is accomplished by the administration of sufficient quantities of fluid to prevent impairment of kidney epithelium by a toxic concentration in the blood and to serve as a vehicle for the elimination of the toxic proteose. A plan then for the treatment of a simple case of acute mechanical obstruction would be:

- 1st. The elimination of as much of the toxic material from the intestinal canal above the obstruction as possible. This can be accomplished to a very marked degree by repeated washings of the stomach while preparation for surgical interference is in progress.
- 2nd. By the very copious administration of water intravenously, subcutaneously, and orally.

These measures should be resorted to vigorously in those cases in which delay is necessary on account of inability to make a diagnosis. This would save many lives.

The operative procedure in simple obstruction should be, the relief of the obstruction if possible. However, in very desperate cases we should be content with a quick interostomy. Of very great importance is the prevention of the toxic material above the point of obstruction being allowed to flow into the normal gut below where rapid absorption ensues and our patient very quickly receives his lethal dose and death ensues within a very few hours in a patient that before operation appeared to be a good risk. We have all seen cases of this type. This can be accomplished by clamping the gut with a rubber covered clamp near the point of obstruction at the time or before the obstruction is relieved. Then temporary interostomy in the loop above the obstruction which is demonstrated to contain fluid. This should not be done with a small rubber catheter but with a large glass tube that will thoroughly empty the bowel of its contents and also washing the bowel through this glass tube. The loop of gut just proximal to the obstruction usually contains much gas and the toxic fluid lies above, then it is better to go higher in

the loop, which is simply a means that is more adequate.

If our non-protein nitrogen concentration estimation indicates a wide margin of safety then the enterostomy may be omitted but the narrower the margin of safety the more necessary it becomes to empty the gut of all toxic material.

The treatment of the complicated cases is the above, plus, whatever the complications demand. I do not wish it to be forgotten that the most important factor in the treatment of obstruction is early diagnosis and prompt relief of the obstruction. I will not touch upon the diagnosis for time would not permit.

CONCLUSIONS.

1.

The poison that is the cause of death in

acute mechanical obstruction is a toxic proteose.

2.

This toxic proteose is found in the gut above the point of obstruction.

3.

It is formed by protein catabolism of the body tissues and excreted into the gut.

4.

This excretory function of the gut is probably a compensatory one.

5.

Treatment is supplying the tissues with large quantities of fluids, relief of the obstruction, emptying the gut above the point of obstruction in all cases except where there is a wide margin of safety as determined by the non-protein nitrogen of the blood.

TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.*

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It would appear that a paper upon the treatment of acute intestinal obstruction would be entirely superfluous before such a body of physicians and surgeons as this. However when we look over the mortality statistics and see the mortality attending this malady under the present methods of treatment, it would seem that a great deal more might be said.

When we consider the fact that the mortality from acute intestinal obstruction is greater than from any other enurable condition it should cause us to stop and take stock and see if there is not some way by which this heavy death rate may be lowered.

In taking our inventory of this condition we are all agreed that the one great element which makes for a high mortality is that of time. It might well be written down as a rule that in a vast majority of cases a death from intestinal obstruction may be charged up to procrastination.

The fact that operation for acute intestinal obstruction done within the first few hours no matter what is causing the obstruction is attended with practically no mortality and that if operation is delayed three or four days in-

condition early and to lay down some rules for treatment pending operation that this paper is offered.

Probably there is no subject connected with surgery which has received more attention, by men engaged in scientific research during the past few years, than has the subject under consideration.

These investigations and experiments have been made largely to determine the cause of death in these cases. These investigations have established the fact that the cause of death in acute intestinal obstruction is toxic fecal vomiting is set up and the patient pronouncedly toxic, no matter what is causing the obstruction nor what the treatment, nor who the operator, will be attended by a frightful mortality.

And it is again to impress upon our minds the very great importance of recognizing this emia and it has been to determine the source and character of this toxemia that they have labored so long and faithfully.

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To enable us successfully to treat these cases we must have some conception of the subject as a whole. What are the toxic elements and where located, so that we can adopt procedures best calculated to counteract their disastrous effects.

I will not try to settle any controversies which have arisen between the different experimenters upon this subject as I am incompetent to decide. Again time, were I so inclined, will not permit my going into a review of the different theories as to the origin and nature of the toxemia which have been set forth in the voluminous literature of the subject for the past ten years.

There are however certain points upon which all of these investigators are agreed, and I want to try to put before you my ideas as to the best methods of carrying out a line of treatment in these cases.

We will not discuss whether or not the toxemia is due as some believe to dehydration. Nor whether the toxemia is endo- or exo-enteric, whether it is formed within the wall or lumen of the gut or whether it is a systemic poison. Whether or not it is a lack of neutralization of a normal secretion or whether it is due to bacterial poisons elaborated in the obstructed gut.

Suffice it is to say that it is a toxemia; this is undisputed. That it is a proteose or non-protein nitrogen toxin, I believe is accepted by all investigators. Now with these points settled as far as we are able to determine with the evidence we have before us, what line of procedure should be adopted best to combat this toxemia? We will divide our subject into three different stages, namely: treatment before operation; the surgical steps to be taken at the time of operation and post operative treatment.

Of course it is understood by all, both surgeons and internists, that acute intestinal obstruction is strictly a surgical condition and without which the mortality is practically one hundred percent. Operations done within the first five hours are attended by only about five per cent mortality. After twenty-four hours approximately twenty-five percent and after forty-eight or seventy-two hours the rate will be much higher, fifty percent to seventy percent. Thus we see the very great importance of early recognition and early

operation. However it is not always possible to have an early operation. Possibly the diagnosis is not clear, due to complicating conditions and faulty history of the case. Possibly and probably the most frequent cause of delay is the unwillingness upon the part of the patient or family to submit to any operation, insisting that their trouble is due to some dietary indiscretion. Possibly it is impossible to get the patient to a hospital early. And possibly the doctor having seen many cases of bellyache and very few cases of ileus decides it is acute indigestion and proceeds to dose the patient with every conceivable kind of a purgative until fecal vomiting sets in and it is forced upon him that he has obstruction before operation is even suggested.

Any way, from one cause or another; there is usually a considerable period of delay before any of these patients come to operation and their management prior to operation may very materially influence the outcome. A case properly treated may recover very nicely from operation even after a considerable period of delay while one improperly managed and mistreated may die promptly even after a much shorter delay. There is no doubt that preoperative management of these cases is very important, and I must beg your pardon for dwelling at some length upon this part of the subject.

What should be considered proper preoperative treatment of a case of acute intestinal obstruction?

In the first place the two most prominent and earliest symptoms are pain and vomiting. The pain is intermittent or paroxysmal in type. This is a symptom which can not be too strongly emphasized as pain arising from perforated viscera or acute inflammatory conditions is not paroxysmal, but constant. Again this intermittent pain continues to grow in severity and lasts until the gut becomes exhausted or paralyzed, thus a careful history of the character of pain should be elicited. Vomiting comes on a little later; the higher the obstruction the earlier the vomiting begins. The vomiting is persistent and becomes more and more profuse as time goes on; first only stomach contents, then bile stained fluid finally fecal in character. There is of course complete cessation of bowel movement, gas as well as fecal matter. However

there may be one or two slight stools after pain comes on, the bowel emptying what is below the point of obstruction, and this often misleads the attending physician. What is now taking place locally and constitutionally? First the gut is making frantic effort to overcome the obstruction. Nature is pouring out an abundance of secretion into its lumen.

The intestine begins to dilate and becomes enormously distended with gas and fluid. This fluid finding no outlet below, is regurgitated into the stomach. Certain changes are taking place in the mucous membrane and walls of the intestine. This fluid becomes intensely toxic and nature tries to eliminate it by vomiting. No water is retained in the stomach. The body tissues are rapidly dehydrated. Blood chemistry shows a marked increase in the non-protein nitrogen. Waste matter is carried to the kidneys in such a concentrated form, due to tissue dehydration, that acute nephritis and often a suppression of urine takes place. Thus a vicious circle is formed, toxemia causing vomiting, vomiting causing dehydration, dehydration causing a marked increase in the non-protein nitrogen content of the blood. We know that the intestinal contents in the obstructed gut becomes extremely toxic. For the reason when removed and freed of all bacteria and foreign bodies and injected into a healthy animal produces all of the symptoms of intestinal obstruction. We also know that this dehydration causes a marked rise in the non-protein nitrogen of the blood. Bacon has shown that dogs dying of thirst present practically the same blood finding that is found in those dying of intestinal obstruction. It has also been shown both experimentally and in practice that life can be materially prolonged by supplying plenty of fluids.

Then how should treatment be carried out? 1st. Enough morphine to make the pain bearable, but not enough to narcotize the patient, especially before a diagnosis has been arrived at. Plenty of water by enema, by stomach, and more especially by hypodermoclysis. Stomach lavage frequently done to remove as much of the toxic material as possible. Very little water taken by stomach will be absorbed, but it dilutes the toxins and after lavage quite a little fluids will be absorbed. Enemas to see if any bowel movement can be

secured. If none, then proctoclysis should be started, but the most effectual way is by hypodermoclysis. No matter how you get your fluids in, be sure and get plenty for the dehydration due to vomiting is exceedingly rapid. Under no circumstances give a purgative; even if there is any doubt about the diagnosis, don't give purgatives. Still I do not believe that purgatives of a mild type are as disastrous as I once thought. I have within the last year had quite a number of very desperate cases all of which had had purgatives in abundance, still they recovered after operation. However, as nothing can be accomplished and much discomfort is caused the patient by their use, they should not be thought of in the treatment of ileus. This treatment should be kept up until an operation can be done. The free use of the stomach tube and hypodermoclysis will be the means of saving many lives. I don't want any one to think I am advocating this as a treatment for intestinal obstruction but as treatment for the patient until operation can be done.

We come now to the operative treatment. We will first divide acute intestinal obstruction into simple and complicated cases.

Simple cases, those when there is no strangulation, simply an obstruction due to foreign bodies or tumors pressing on the lumen. Adhesions and intra-peritoneal bands causing a blocking of the canal.

Complicated cases. Those where a part of gut is strangulated as in internal or external hernias or by adhesive bands thus adding another element in the case of gangrene and infection and possibly peritonitis. These cases are of course the desperate cases and no one can tell which is which until the gut is exposed. If operation is done before too much damage is done the gut, it is as simple as the uncomplicated cases. Therefore we might say that the complicated cases are made so by delay.

If the patient comes to operation early, before toxemia and dehydration are too profound, I have always made it my practice simply to seek out the obstruction and remove it and close the abdomen. It is usually possible to do this and rarely will it be found necessary to carry out any elaborate operative technique.

The late cases which come to us in a desperate condition are the ones which demand

our most serious consideration and are the ones which give us our high mortality.

They are desperately sick patients, skin dry, eyes sunken, pulse rapid and feeble, temperature sub-normal and many times apparently moribund. Now what should be our course of treatment? Operation should be done at once. The stomach should first be washed out as this gives freer play to the diaphragm, and keeps the patient from vomiting during the operation.

Some operators advocate simple enterostomy in these desperate cases. I can not agree to this as I feel it is very important to know whether or not there is any strangulation and possibly a gangrenous loop of gut and this I first try to ascertain.

Usually if there is strangulation there will be free peritoneal fluid very much tinged with blood. Whereas if no strangulation exists the fluid will not be bloody. In locating the obstruction it is a good plan first to look at the caecum. If it distended we know the obstruction is in the colon.

If the obstruction is simple and no strangulation present or if the obstruction is due to the gut being entangled in a mass of adhesions so that it will necessitate a considerable amount of manipulation and delay I let it alone and do a simple enterostomy and get out. If a simple band of adhesions or some foreign body or any thing which can be rapidly remedied, I remove the obstruction and do an enterostomy.

Now what shall be done when a loop of gut is found strangulated?

These are the cases about which I wish especially to speak as they are the desperate cases and the ones which give us our greatest mortality.

If the loop of gut is completely gangrenous and the patient not able to stand a resection, this loop of gut should be brought outside the abdomen and fastened there and immediately opened. Or it should be cut away and the two ends of the gut brought outside and fastened. This gives free drainage of the distended and dilated intestines and gets rid of the toxic material which is present. After the patient has recovered from toxemia, the anastomosis can be made later.

Now when should and when should not a

resection be done? Just how much damage can a gut stand and still be safe?

I have had such gratifying results in the cases where I have done a resection and have been so greatly chagrined at the loss of some where the gut apparently was sufficiently intact to trust to return it, that I am now doing more and more resections. If I am in doubt I resect. If after the constriction is freed even if the gut looks pink if there are ecchymotic spots which we frequently see and there is evidence of any mesenteric thrombosis I resect.

It seems that the contents of these strangulated loops are much more highly toxic than where there is no strangulation. If we do an enterostomy in this damaged gut we are very likely to get necrosis and a leaking of the enterostomy opening. If we drain the gut above the strangulation we do not get rid of the highly toxic material contained in the strangulated loops are much more highly toxic than absorbed and will often kill the patient. Resection and end to end anastomosis can be done quickly and add very little to the shock of the operation. I deem it far safer to do the resection than to take chances on the damaged gut and it is often difficult to tell when a gut is safe to return. Now when should enterostomy or enterotomy be done?

If operation is resorted to before the gut becomes paralyzed and distended it will of course be unnecessary to resort to enterostomy. However, on the other hand, when there is complete intestinal paresis no matter from what cause, whether it be obstruction or peritonitis, and the intestine is distended with gas and toxic fluid, an enterostomy is clearly indicated. If the obstruction is removed and this enormous amount of toxic material allowed to flow down into the collapsed and thirsty portion of the intestinal tract absorption will be so rapid that a fatal toxemia will develop in a few hours. By doing an enterostomy and draining away this gas and toxic fluid and instilling into the gut normal salt solution at the same time giving free hypodermoclysis the dehydration will be overcome and the fatal toxemia prevented.

Each operator has his own method of making an enterostomy. Some by opening the gut and using a Paul tube attempt to empty the

gut at once and wash out with salt solution, then closing the enterostomy wound. Others prefer using a soft rubber tube and establishing intestinal drainage. I prefer the latter method and try to make my enterostomy some distance above the seat of obstruction. If made near the point of obstruction where the intestine is distended simply with gas, after the gas escapes there is a collapse of the gut and drainage delayed.

The post operative treatment consists of stomach lavage first before the patient leaves the operating table and repeated as often as necessary. Morphine for restlessness as indicated, and a continuation of the administration of fluids per rectum and by hypodermoclysis.

I make no attempt to move the bowels for some hours. Then I give pituritin i.e. and either castor oil or saline cathartics.

One of the most difficult things I have had to combat especially in the cases where the strangulated gut has been dropped back, is a later, almost uncontrollable diarrhoea.

I wish again to stress the importance of resection of strangulated gut if there is any doubt of its integrity or if there are ecchymotic spots and evidence of venous thrombosis. In making my resection I use no mechanical appliance nor any non-absorbable sutures. I use chromic gut entirely.

One more word as to the technique of an enterostomy. Each operator has his own method of making these drainage openings. Some fasten the enterostomized gut to the abdominal incision. I have found this unnecessary. One can either use the Coffee method or the double purse string method and after fastening a portion of omentum around the enterostomy opening drop the intestine back. My practice has been first to put in a string suture, open the intestine by making a small puncture insert my tube and tie the purse string. Another purse string suture is then placed about $\frac{1}{4}$ inch from the first and tied as the tube is depressed. Then one stitch through the tube to hold it in place. Some times I stitch omentum over the opening, sometimes if the omentum does not readily present I simply drop the enterostomized gut back into the abdomen and close. One must be the judge when to remove the tube. I usually remove it as soon as vomiting ceases and

the Lowels move. While the tube is in place I frequently put water or salt solution into the gut through it, also when I want a purgative have introduced magnesium sulphate. After a few days the tube can be removed and there is usually little leakage and the fistula readily closes. If the gut is made fast to the abdominal wall it frequently necessitates a secondary operation.

Then to summarize I will say:

As early an operation as possible.

Plenty of fluids before and after operation, either by proctoclysis or hypodermoclysis or both. Stomach lavage as often as necessary to keep the stomach free from toxic matter. When in doubt as to the integrity of a strangulated loop of intestine, always resect. If the gut is distended and paralyzed a well placed enterostomy.

DISCUSSION.

of the Papers of Drs. Caldwell and Sheddan.

DR. E. M. HOLDER, Memphis.—Greig Smith in his surgical slogan regarding intestinal obstruction says: Give the patient an enema of brandy and hot water, wrap him in blankets, and apply hot water bags about him, and watch for the development of signs and symptoms, granting the patient, is in shock. Within thirty minutes watching for the signs and symptoms, reaction will take place in all probability, and then you can perhaps make an approximate diagnosis.

The trouble with cases of intestinal obstruction is that it is difficult to make a diagnosis in the beginning. One of the essayists brought out the point that there is opposition on the part of the family when the doctor tries to show that the child, the wife, or the husband ate something that disagreed with them, and the case might be simply one of green apple belly-ache.

Rushmore tells us that if we can operate within a reasonable time from the onset of the obstruction, the mortality may be reduced from 40 or 50 per cent., as it now stands, to 12.5 per cent. Even that is a high mortality. A still earlier diagnosis, one that is made within a few hours from the onset of the trouble, would reduce the mortality to probably 5 or 8 per cent.

The general plan of physicians over the country, when they recognize a plain case of suspected mechanical intestinal obstruction, is to empty the stomach by lavage, to evacuate the rectum by copious injection and to endeavor to make a diagnosis as soon as possible.

There are many different mechanical causes of intestinal obstruction; there are some fourteen or fifteen causes we can find in any textbook on the subject, aside from the malignant causes, and it would be useless for me in five minutes time

to try to discuss the treatment brought out by the essayists.

If I have a case of intestinal obstruction due to fecal impaction, I would chance giving small doses of castor oil, frequently repeated, in addition to washing out the rectum and resorting to stomach lavage. How can we tell the obstruction is due to fecal impaction? In children you can sometimes feel a mass, but in adults it is rare. If the patient is not relieved, you hesitate to give purgatives in these cases, and so would I. I have certainly seen evidences of inflammatory reaction going on. If we open the abdomen and find fecal impaction, we break it up by manipulation, passing it on down the gut without opening the gut. If we find the obstruction is due to bands or adhesions, we relieve the obstruction by dividing the bands, by breaking up the adhesions, covering raw areas with peritoneum, or with a flap of omental tissue to prevent recurrence. If we have intussusception to deal with, we should try to reduce the intussusception and shorten the mesentery. But after all, the plans brought out by the essayists are more modern. Moynihan proposes in these desperate cases, with shock and collapse, never to give a general anesthetic. We all agree as to that, owing to the danger from vomiting during the anesthetic of sterocoraceous material which may gravitate into the bronchi—an accident that any of us may have. We may open the abdomen under local anesthesia and make no effort to find the lesion or to relieve the cause of the obstruction at that time when the patient is in shock, but simply do an enterostomy, opening one of the coils of gut above the seat of obstruction and washing it out and draining it. Death is caused from toxemia, and opening the distended coil of gut above the seat of obstruction will relieve the patient temporarily by draining of the toxemia.

Dr. Stewart, an assistant of Dr. Chalmers Dacosta, has proposed a unique thing. He takes the ordinary Murphy button and introduces it into the coil of gut without making any effort to locate the lesion or to relieve the obstruction and brings it out through the incision. One part of the Murphy button is slipped into the gut, a pursestring suture having been introduced previously but not going through the mucosa. This is tied in and held with forceps. On the other end of the Murphy button is slipped a rubber tube which fits over the Murphy button, which is anastomosed with the part in the gut, the tube leading down to a basin. Dr. Stewart deserves great credit for this scheme.

The plan of Binnie, of Kansas City, is most ingenious. He puts it in the gut and fastens it to the parietal peritoneum; it is brought up higher to be taken out later and to pull out the Murphy button. We must consider the relief of the condition if we have nothing else in our mind.

The cause of obstruction can be dealt with later and the enterostomy can be handled later.

Mikulicz proposes that when he undertakes to operate on a shocked patient that is toxic, with subnormal temperature, to open the abdomen in the same way under local anesthesia and bring the gangrenous or ecchymotic coil of gut into the incision, fixing it to the long axis of the incision and doing an enterostomy at the upper or proximal end of the loop that is brought out in healthy gut tissue. It is practically the same thing, except that if he brings the coil of gut out into the wound, it will die, the very thing Dr. Sheddán spoke of, and where there are ecchymotic spots he can watch it. If this portion of the gut dies, he can handle it later, and may be the ecchymotic spots will disappear. Resection is condemned in these cases because the patient is not in a condition to withstand resection. The best thing is to use an enterostomy tube or a Paul tube above the coil of intestine that is gangrenous, and you have it there under inspection. In all probability the gangrenous portion will have to be removed; you will have to do a resection. The coil of intestine may be ecchymotic, it may react, and you may be able to save it. It is possible that some of these ecchymotic spots will disappear and the ash-gray color of the gut will be replaced by the bright blood being returned.

Chalmers Dacosta in his clinic recently made the statement that he has been doing the Mikulicz operation and has been getting better results than before. That is the plan for the desperately sick cases. We have been losing from 40 to 50 per cent., of these patients before. There is absolutely no attempt made to locate the lesion. There is no time to resect the bowel as the patient won't stand it. These patients are bad surgical risks to begin with. The least that can be done under local anesthesia is to drain the toxic material from the proximal gut area and handle the condition later. That is the plan we are all working to. The two essayists have brought it out beautifully. It is generally agreed I think that we have been doing too much. There is no trouble about desecting later when the patient reacts and when the condition of the patient justifies it.

DR. W. M. McCABE, Nashville.—The mortality of intestinal obstruction will not be reduced until these patients are sent to us earlier. When I went to the City Hospital about ten years ago the mortality of intestinal obstruction was 60 per cent. By simply doing an enterostomy in extreme cases the mortality was reduced to 40 per cent. If the patient is in good condition and is a good surgical risk, you may perform any operation that is justifiable. If, however, the patient is in an extreme condition, as many of them are, enterostomy is the operation of necessity. Our pro-

cedure has been to open the abdomen under local anaesthesia, pick up the distended loop of gut, place two purse string sutures, open the gut, insert a large umbrella catheter, tie the purse strings, and if the patient's condition warrants it, search for the point of obstruction while the contents of the bowel is draining. If the condition of the patient is not satisfactory, we close the abdomen and leave in the catheter. The patient is placed in bed and fluid administered by hypodermoclysis.

The question of resection often arises. If the gut is left to nature will it return to normal? No one at present can definitely state what degree of trauma, that is circulatory insufficiency, will injure a gut beyond the possibility of recuperation. If the vessels are not thrombotic, the blood supply good, the continuity of the gut perfect and the peritoneum does not slip, then, the chances for recovery are excellent. In other words if the tissues comprising the wall of the intestine are not actually gangrenous, one may expect recuperation.

I have been doing some experimental work on dogs at the Vanderbilt laboratory and I find that the gut will recuperate after an immense amount of what might be called circulatory trauma.

DR. H. H. SHOULDERS, Nashville.—The point has been emphasized that these cases of intestinal obstruction must be operated on early, but the method of arriving at an early diagnosis has not been emphasized. We might mention that if an attempt must be made, there are two things which can be done and should be done, the thorough administration of water and gastric lavage. It has been proven experimentally and clinically that these cases will live for ten days if these two measures are employed. They will remain in a good operative condition for a sufficient length of time after the diagnosis is made if these two measures are employed early and are kept up. So I think that point should be emphasized.

The next point in diagnosis is pain which may vary widely. Vomiting, which does not begin early and then ceases for a long time, occurs in so many other acute abdominal conditions, but it begins and persists, and then we have progressive distention of the abdomen, no gas by bowel, and no temperature by rectum, should lead to a strong suspicion of intestinal obstruction and very careful observation should be made for the presence of obstruction.

Dr. Morrison has said all these acute abdominal conditions pass through three stages rather early. First, the stage of shock; second, the stage of reaction, and third, the stage peculiar to each particular condition. The rapidity with which they pass from one to the other stage will determine the general condition of the patient and the location of the lesion, and whether or not it is complete at the moment, etc. Furthermore, I

think a strong bearing on the degree of shock will be determined and the amount of intestine involved will depend more on trauma to the mesentery. If the trauma has been applied to the gut wall, it can be restored if the mesentery is in good condition.

DR. H. L. FANCHER, Chattanooga.—The cause of death in case of intestinal obstruction is biochemical. As to whether it is due to the direct absorption of proteids, or the lack of elimination of proteids, or to the nonprotein nitrogen blood accumulation, we are still in doubt. We do know that proteid absorption produces elevation of temperature, and in so many of these cases there is no marked elevation of temperature.

Another point in regard to the cause of death is the fact that the secretions of the upper alimentary tract are poured out in succession. The stomach secretion, the bile and pancreatic secretions, the duodenal and jejunal, all keep up proper function, proper absorption, and proper elimination which must be going on in the natural course of events, or these biochemical changes form in such combination that no chemists can unravel them.

When it comes to the treatment we have those cases of what we might term potential obstruction. We do not know whether they have complete or partial obstruction. It has been my custom and practice in these cases to wash out the stomach, to wash out the colon, and then pour anywhere from eight to sixteen ounces of paraffin oil into the stomach through a tube, which can not do any harm, and may never do any good, but occasionally I have had oil go through and prove to me these was only partial intestinal obstruction when I thought in the beginning there was complete obstruction. I do not know but what the oil may prevent absorption to a certain extent and dispose of some of the toxins that are in the intestinal tract.

When it comes to the operative procedure, when I am in doubt as to the condition of a piece of gut I resect except in those extreme cases that come to us in shock and are practically moribund. All one can do in such cases is to resort to enterostomy. Where I find I can resect the gut that needs to be attended to by operative procedure, I can bring it to the outside, protect it properly, and I feel sure as regards that portion of the gut. If you bring it out, you always have to do a secondary operation, and then you are probably going to have more adhesions that will give you trouble later on.

DR. ROBERT C. CALDWELL, Nashville.—(closing on his part.)—The principle point I would like for you to bear in mind in observing these cases is diagnosis. In our diagnosis, as well as in what we wish to do operatively, an important thing is the estimation of the blood

concentration of protein. This is important in connection with all of our operative procedures. When we consider the operative side of these cases, this probably, at the present time is the most important and reliable guide that we have as to what may be done in a given case, how much of an operation the patient will stand, and so on.

Dr. McCabe in his discussion said that we would not lower the mortality until we made the diagnosis early. If we treat these patients properly, although they come to us late with a diagnosis of obstruction, we will lower the mortality considerably. We should try to eliminate as much of the toxins as possible by thoroughly emptying the intestinal tract by way of the stomach and by giving a sufficient quantity of fluid. We know that we can keep dogs alive indefinitely if we supply them with fluid.

DR. L. L. SHEDDAN, Knoxville, (closing).—There is not much I can add to what I have already said. Dr. Caldwell has replied to what Dr. McCabe said about lowering the mortality. A great deal can be done in lowering the mortality by the proper preoperative treatment of these cases. Dr. Caldwell has told you that life may be prolonged in dogs indefinitely by the administration of plenty of fluid. If a portion of the gut is strangulated or is gangrenous, then you have a complication, and you have added to the toxemia the danger of a general peritonitis from the gangrenous gut which is present. When can the gut be returned, and when not? That is a question which has given me more concern

than any other feature in these cases. Early in my experience, if the color of the gut returned, even if there were ecchymotic spots and slight evidence of mesenteric thrombosis, I dropped the intestine back, but it has been shown by many investigators that toxic matter originates within the strangulated gut itself, and if we drop the intestine back, if it is viable, it may not become gangrenous and may not become perforated, but we have turned back into the abdomen the most toxic part of the intestinal canal, far more toxic than it is above the strangulated portion. In many cases I have dropped the intestine back and have been utterly dumfounded to have the patient die in a few hours. In the last five years my practice has been more and more in the direction of resection of the intestine, and I must say that my mortality has been considerably lowered. I have resected from six inches to five feet of intestine; it only takes a few minutes to do it, and the results are very satisfactory. In the desperate cases, where it looks as though you cannot do anything, I do not think any man would be justified in opening the abdomen and leaving a gangrenous coil of gut to produce general peritonitis. It will not do the patient any good if he leaves behind a gangrenous coil of gut of say twelve or fourteen inches to rupture into the peritoneal cavity. What good would it do to resort to an enterostomy, if there is gangrenous gut or bloody fluid, the gangrenous portion of the gut should be brought outside of the abdomen and opened up according to the method of Mikulicz. Do not leave damaged gut to be the starting point for a general septic peritonitis.

ABDOMINAL PREGNANCY AT TERM—REPORT OF CASE.*

H. L. FANCHER, M. D., CHATTANOOGA.

WAS called in consultation by the family physician December 18th, 1921.

History.

Mrs. M. White, age 43. Married at age of sixteen, mother of eight children, five living in good health, three died at "teething time." Youngest child, age two years, living. One abortion five years ago at three and one half months. Foetus was not formed and her physician told her it was a "false conception."

She had always been strong and healthy, labors normal and has nursed all her babies for the first twelve months. No history of venereal infection, undue pain or discharge.

Twelve months after birth of last child normal menstruation occurred and again one month later which was Feb. 15, 1921. She

did not menstruate again, developed the usual symptoms of a normal pregnancy and felt first movement July 1st, four and one half months after last menstruation.

From this time on she complained of feeling peculiar and at times would feel faint with rapid heart action. Foetal movements were very pronounced and different from that experienced with former pregnancies. Her breasts filled up and abdomen became very large, with greatest enlargement on right side.

On November twentieth the foetal movements were very active. She described them as like a convulsion, which made her feel indescribably queer. She never felt any movements after this date.

About two weeks later she noticed that her abdomen was smaller and that her breasts, which for a month had been flowing milk,

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were becoming flabby. About this time she began to have a flow which at times was light blood and at times the flow was dark and tarry. Sometimes the flow would seem almost like water and an occasional piece of membrane would pass.

Up till this time, nine and one half months from date of last menstruation, she had never had a pelvic nor abdominal pain and at no time was there any flow from the uterus.

Examination.

A strong vigorous looking woman, height, five feet ten inches, weight 165 pounds. Blood pressure S-140, D-90, Pulse 80, Respiration 18. Head, neck, heart and lungs negative.

Breasts large but pendulous and flabby with dark areas around nipples. No fluid could be expressed from the nipples.

Abdomen large and pendulous, with greatest enlargement on right side. No tympany, no rigidity and manipulation does not cause pain. Large regular mass on right side extends from costal margin down to symphysis. Small mass size of fist in lower left quadrant which seems to be continuous with large mass on right side. No pain complained of or perceptible contractions on persistent palpation. No foetal heart sounds or placental bruit could be elicited by auscultation.

Vulva and vagina normal for multipara. No discoloration, oedema or enlarged veins.

Cervix very high and close to symphysis, slightly funnel shaped. Is thick and resistant, end of index finger will not enter even with firm pressure.

Boggy mass felt behind and to left of cervix, hard round mass size of fist felt to left side closely hugging left side of symphysis.

Diagnosis.

A ten months pregnancy with dead foetus, either abdominal, or uterine with large fibroids. I advised laparotomy which was done next day.

Operation.

A right rectus incision was made extending above and below umbilicus. After entering abdominal cavity a thin membrane was encountered which was incised. Quite a quantity of cloudy, straw colored fluid escaped and a perfectly formed 16 pound foetus was delivered. The bones of the cranium were loose and epithelium was exfoliating.

A large placental mass about one inch thick and twelve inches in diameter was encountered completely enclosed within membranes which were adherent to sigmoid, colon, small intestines, uterus and adherent to and extending to the top of this mass was an elongated appendix.

The right tube and ovary could not be isolated. Numerous blood vessels of varying size, some as large as a lead pencil, were branching out over this mass from its lower posterior attachments. No sign of past hemorrhage in the abdomen or placenta.

The appendix was ligated cut off and cecum dropped back. Dissection was carried out very similar to that practiced in thyroidectomy, clamping and cutting till the entire mass of placenta and membranes were enucleated.

We were fortunate in preserving enough redundant peritoneum to cover all raw surfaces except on the posterior wall of the uterus. A supra-vaginal hysterectomy was done and the abdomen was closed. Convalescence was uninterrupted and the patient left the hospital on the twelfth day.

Comment.

Extra uterine pregnancies are not rare. It is estimated that about one per cent of all pregnancies are extra-uterine, but, judging from the literature, the so called abdominal type at full term is very rare.

183¹, cases of ectopic pregnancies were reported from the Cook County Hospital, Chicago, from 1912 to 1919 in which only two went to full term.

Ley², of London tabulates 100 cases of full-time extra-uterine pregnancy from the literature to which he adds 2 cases of his own in the same journal. Gilliatt reports 2 cases coming under his observation.

Stubbe³, of Australia reports one case, Newell⁴, of Missouri reports 3 cases, Moore⁵, Davidson⁶, Rozar⁷, and Deavor⁸, report one each.

DeLee⁹ quotes Stillner as having collected 179 from the literature of the past.

Abdominal pregnancy is supposed to be primary or secondary. The primary form is disputed on the grounds that if the impregnated ovum drops into the free abdominal cavity the peritoneum will digest it. Also, it

seems to me, a far fetched idea that the impregnated ovum could get protection and nourishment outside its natural bed, the decidua, which develops only, so far as we know, in the uterus and tubes when conception takes place. Also, that if the chorionic villi springing from the embryo have the power of penetrating the decidua until maternal blood is adequately supplied to nourish the embryo it would be natural to suppose that these same chorionic villi, if the ovum developed to this stage, in the peritoneal cavity, in the absence of its natural decidual bedding, would penetrate the walls of the abdominal viscera and lead to grave complications.

Many obstetricians, now, deny the possibility of a primary abdominal pregnancy. If we eliminate primary abdominal pregnancy, then, every abdominal pregnancy is, in a sense an abortion, expelled from a tube or an ovary with a tubal attachment.

When a pregnancy becomes abdominal it usually dies as a result of immediate hemorrhage. However, it may have sufficient placental attachment to go on to maturity and then die as in the case I have just reported.

A peculiar feature is that the foetus will die at maturity and a so-called spurious labor comes on in which there will be uterine hemorrhage with expulsion of decidual membranes.

After the death of the foetus, its fluids, with that of the amnion, begin to be absorbed. Then if the patient is not operated on one of three things is going to happen: 1st, all the fluids and soft parts will be absorbed leaving the bones encysted in the free abdominal cavity, or later will work their way into hollow viscera. 2nd as the fluids are absorbed calcium salts are deposited forming a lithopedion ("stone baby"), or 3rd, infection takes place early and the mother dies of sepsis.

The maternal mortality runs very high. Ten per cent in the ones where the placenta and membranes were removed at times of operation and forty per cent where the placenta was left to slough away.

It is the opinion of all the late writers that the placenta and membranes should be removed at the initial operation if possible. Of course, there will be cases with adhesions so extensive and so vascular that the only

recourse will be to leave all or a part of the placenta in situ and pack to control hemorrhage.

The case I have just reported is the only one coming under my observation and I report it that it may be of record. It, probably, was of the tubo-ovarian type, as no part of the right tube and ovary could be isolated at the time of operation.

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DISCUSSION.

DR. J. M. MAURY, Memphis.—This subject is very interesting to me. I have seen two cases of this character, both of which came to operation after the death of the fetus.

One case was in the practice of my father, Dr. R. B. Maury, and the other was a case of my own. In both cases some months had elapsed since the death of the fetus and as the placental circulation had ceased there was but little to do aside from brushing off the fetal structures from the adherent intestinal, pelvic and abdominal walls and other structures with which they were in contact.

I noticed Dr. Fancher states there was considerable hemorrhage to deal with in his case. If he had waited a while longer and given nature a chance to get rid of the placental circulation, his case would have been very much easier to operate on, and his result would have been more certain. It could not have been any better as his case recovered without any outward symptoms.

The most interesting aspect of cases of this kind is where operation is done during the life of the child. About a year ago I looked up the literature on this subject, not that I was expecting a case, but I wanted to be prepared if anything like that happened to me. It may be interesting to you if I quote from an article I read on this subject. There were 46 cases reported by Dr. Horsley, of Richmond, in which the child was alive and at a viable age (after seven months), and I collected 29 other cases. Dr. Horsley's cases were very meagerly abstracted, and a good many of the points that I brought out in the paper were not covered by his cases so that I could not get statistics from this whole number.

In the first place, the preoperative diagnosis was

made in sixty-two per cent of these cases. That compares less favorably than where the diagnosis is made primarily in extrauterine pregnancies of an earlier date. The statistics show that about fifty per cent of extrauterine pregnancies of early date are not diagnosed when first seen by the general practitioner. A larger proportion is diagnosed by the specialist when they come to him for operation, but presuming that these cases were all operated on by specialists or by men trained to do this work, the diagnosis of sixty-two per cent by these experts is not very good.

The mortality rate for the mothers was 24.6 per cent. This compares favorably with the total given in Kelly's Gynecology; this table was compiled by Harris and included the cases which occurred between 1889 and 1896. In that table thirty-two per cent is the mortality of the mothers.

Death is caused by hemorrhage or by sepsis or by both.

As to the mortality of the children, these all being cases that were operated upon while the child was still alive and at a viable age, that is, after the seventh month, the death rate was 45.7 per cent and 26.6 per cent of the total number showed some deformity. The deformity in nearly every case was not a fetal deformity or abnormality but rather the result of pressure due to the restricted environment of the child. There were such things as talipes and deformities about the skull particularly, the skull being flattened on one side or the face flattened, or something of that sort.

Regarding the symptoms, you would expect that most of these cases would give a history of early rupture, because, while primary abdominal pregnancy does exist, it is rare, and nearly all these cases are in the beginning tubal and even undergo abortion or rupture, and the child is thrown into the abdominal cavity where it goes on in its development. But in only 26.9 per cent of these cases could a history of primary rupture be obtained. That also illustrates the necessity of careful history taking in all cases of extrauterine pregnancy in attempting to make the diagnosis. It is hardly believable that 26.9 per cent of these cases occurred as primary abdominal pregnancies and did not have a rupture in the first twelve weeks.

Of other symptoms, pain is the most prominent. It occurred in eighty per cent of the cases. Toxemia is another very frequent symptom. Vomiting, fainting spells, abdominal crises, frequent urination, and a variety of symptoms which could hardly be taken as indicating especially the presence of an abdominal pregnancy.

Placental attachment is probably one of the most important items to consider in these cases, especially in their treatment. The placenta was attached in almost every conceivable position: on the surface of the liver, the root of the mesentery, the anterior abdominal wall, the lateral pelvic wall, the uterus, the intestines, and all the structures in the abdomen. You can readily see that the safety of the case at operation, where the placenta is

removed, depends largely on its attachment. When attached to the liver or plastered against the pelvic wall or at the root of the mesentery, it is a difficult matter to remove the placenta without the patient bleeding to death. Those cases in which the placenta was not removed gave a mortality of forty per cent and in those cases in which it was removed the mortality was only ten per cent. Of course, when the placenta is not removed the sac is simply opened and packed, and the placenta and membranes then undergo necrosis, generally infection, and are sloughed off. This gives rise to a certain degree of sepsis and frequently gives rise to death to the patient, as indicated by forty per cent mortality when the placenta is retained. It is important to remove the placenta where it can be safely done. In some of these cases the placenta was attached by a pedicle such as that of an ovarian cyst. These cases present the lowest mortality because they can be removed with the least hemorrhage.

The size of the uterus was another interesting point. I noticed in Dr. Fancher's case he said, I believe, the uterus was about the size of his fist. Is that so?

DR. FANCHER: Yes.

DR. MAURY: A great many cases are referred to in just that way: "the uterus was present and about the size of a fist." No matter whether the case goes to term or is of shorter duration, the uterus seems to enlarge to that extent and does not get any larger.

In the treatment of these cases, it seems to me, they present themselves into three classes. First, those cases which are nearly normal in their symptoms or in the condition present, i.e., in which there are practically no symptoms other than those of a normal pregnancy. These cases are either not recognized by the physician, as a rule, or the women do not present themselves for treatment until they have gone beyond their term. The child has died, and in these sufficient time should be given for the placental circulation to cease. It is an easy matter to peel off the membrane and the placenta without any hemorrhage.

The second class are those which are recognized by the attending physician, but the symptoms are so slight that the cases are practically normal ones. If those cases can be watched, it seems to me with the high mortality from operation, both for mother and child, and the deformities to which the child is frequently subjected, it is in the interest of the mother to wait until the child is dead and the placental circulation has ceased.

The third class—and I believe this class comprises the smallest number of cases—are those individuals who are impelled by pain, hemorrhage, syncope, toxemia, and other important symptoms immediately to place themselves in the hands of the surgeon, and are cases that should be operated on without delay. This particularly refers to the earlier months of viability of the child the seventh month and the early part of the eighth month. The longer a patient goes in the pregnancy the less

danger there is of hemorrhage and other complications developing.

DR. J. C. AYERS, Memphis.—There is nothing special that I can add to the discussion of this paper except to report a case of abdominal pregnancy at term that I had in my service at the Memphis General Hospital some five years ago. The feature about that case particularly was a rupture and a diagnosis was not made. The diagnosis I made was impending rupture of the lower uterine segment. On vaginal examination the cervix was felt in front of the child's head, with the head down in the pelvis. Of course, there was nothing between my finger and the child's head but the peritoneum and vaginal wall. Looking back on it, it looked like an inexcusable error in diagnosis. Dr. McGhee helped me in that operation, and just as we were preparing the patient, the anesthetist called our attention to the fact that the woman was in shock. The abdomen was opened at once, and there was an enormous amount of hemorrhage, almost an unbelievable amount. We of course were working on the theory that we were dealing with a ruptured uterus. We went down and clamped off the broad ligament, but after delivery of the child and a part of the placenta we found we did not have a rupture of the uterus, but had an abdominal pregnancy. We hurriedly did a hysterectomy and were fortunate to get inside the clamp the site of the placenta which was evidently the broad ligament itself. We closed up at once, but unfortunately the woman died within the next hour. The child lived.

DR. WILLIAM THOMAS PRIDE, Memphis.—I enjoyed Dr. Fancher's paper, and I take it, his case was one of pregnancy in the tube which ruptured early and attached itself to the broad ligament. It is a question whether such a thing is a real abdominal pregnancy. We know that the ovum is extruded from the cortex, the ovum is sucked up by the fimbriated extremity of the Fallopian tube, the male element enters the inner side or the uterine side of this tube, they meet at the middle and inner third and impregnation or fertilization takes place. I believe that all of them start in this manner. Whether this will come out at the uterine side, or the fimbriated extremity, or rupture out into the abdominal cavity, we do not know. There is no reason why this fertilized product should not come out of the fimbriated extremity. There is no reason why it should not rupture into the abdominal cavity, but as for the fertilization and maturation taking place primarily in the abdominal cavity, we do not believe that happens very often. What we call an abdominal pregnancy is of course usually secondary, the primary fertilization taking place in the tube and either rupturing out or passing out. I think if all these cases could be diagnosed early, they would all be considered true extrauterine pregnancies and not abdominal pregnancies. We know however, when one tube is removed on one side and an ovary on the other, pregnancy will take place oc-

asionally, that is, by the ovum traversing the abdominal cavity and being taken up by the tube on the opposite side, pregnancy taking place in that way. It shows the ovum is not always absorbed in the abdominal cavity; that it will transverse the abdominal cavity without any ill result. So we have no reason to believe that absorption will always take place of the fertilized product of conception.

Another thing: I believe the attachments of these products of conception more often take place around the broad ligament which, of course, is favorable. If it takes place on the intestine, as sometimes happens, I believe one or two cases have been reported—usually causes intestinal strangulation and operation must be done in early fetal life. However, when it attaches itself to the liver, to the mesentery, or to the abdominal wall, they go full term, as in the case reported by the essayist. His case I think was a ruptured extrauterine pregnancy which retained its life and attached itself to the broad ligament.

DR. HUGH C. CARTER, Memphis.—A patient was admitted to the Memphis General Hospital who had come from Indianola, Mississippi. A doctor sent her up here. She gave a history like this: she was pregnant normally so far as she could tell, and when she thought she was in labor she called a physician. The doctor responded to the call, made a vaginal examination, and found the cervix at once beginning to dilate. She must have had false labor pains, and he went back home. He heard nothing more of the woman until four weeks later, at which time he was called again, and found the woman running a temperature of 101°. She was in a septic condition. After watching her for five days he concluded she had a dead fetus, brought her to Memphis General Hospital, and she was operated on at the time, and it proved to be an abdominal pregnancy; that is, it was extrauterine as far as could be demonstrated at that time. It was diagnosed as abdominal pregnancy before and after operation. If I am not mistaken, this woman was in Dr. Smythe's service at the time and was sent to him.

Another case I have in mind we have under observation at this time. It is very interesting. The patient was operated on by myself and brother last July 7th. During the operation we removed both tubes. We proposed to do a hysterectomy at the same time, but the uterus was very small. She had one abortion eight weeks before coming to us. Both ovaries were normal. We did not remove either ovary, but did remove both tubes. That patient came back to me some five weeks ago. She lives in Arkansas, about one hundred miles from Memphis. At that time we found she had gained considerably in weight; the mammary gland was considerably enlarged, and she had symptoms of nausea and symptoms of pregnancy. We made an examination and tried to be as careful as possible, and we believe we have there an abdominal or ovarian pregnancy on the left side. We of course stated to her what we thought; we sent her back home and arranged with

The doctor to watch her carefully. The breast symptoms, especially of the mammary glands, nipples and everything, denote pregnancy. The increase in the size of the mammary gland, the morning sickness all seem to point to a typical case of pregnancy. Whether she is or not I do not know. We made last week stating that she was doing nicely, that her abdomen was enlarging, and of course it may be a uterine pregnancy. There is a mass on the left side which leads us to suspect that it may be an abdominal or ovarian pregnancy.

DR. ANDREW PAYNE, Greenville, Mississippi.—Having had two or three cases, one of which ran twelve months, and another thirteen months. I thought until today I had the record so far as I had heard anything as to the weight of the child. This one that was eleven months since the woman's last menstruation, weighed eleven pounds. I was amazed at the mother of this woman. She asked me, after I came out of the operating room, if she might view the remains, not knowing what the operation had consisted of. I thought it was rather unique in that we really had few remains to show after operation. This case was very interesting in that a doctor forty miles above me had seen this woman at his office and had recommended that she be operated on as a probable diagnosis. I had a letter from her her immediate operation. He kept her in his office and operated on immediately. He had called up some hospital in Memphis and had made arrangements for all that afternoon and night; the next day, at 12 o'clock, he sent her home so as to catch the afternoon train for Memphis. The operation on this woman was a successful one, the child being of thirteen months duration, and was a large child. The adhesions were dense. I think the child had been dead at least two months. It was fortunate for me that the child had been dead that long.

Dr. Maury brought out a point which I think is very applicable to these cases, and that is, there is safety in waiting for a time after the child is dead.

DR. JOHN L. MCGHEE, Memphis.—I simply rise at the request of the essayist to report a case to add to the number already reported.

My experience in this condition is limited to two cases, one of which was reported by Dr. Ayres, to which I can add nothing. My opinion is that was a secondary abdominal pregnancy as evidenced by the fact the placenta had apparently its original attachment in what was originally the Fallopian tube. An unusual feature was that rupture had occurred and abdominal hemorrhage began somewhere after the patient was put on the table in order to proceed with the operation. That was during the preparation of the patient. The hemorrhage was so profuse that shock came immediately as the doctor said. His diagnosis was the rupture of the uterine segment, and he was under the impression we were operating for a rupture. The child lived. The mother died within a few hours as the result of hemorrhage. He did not mention the child had double club feet.

The other case I wish to report occurred within about a month of that case and belonged to the class in which the fetus was viable, and the woman came in in the eighth month of pregnancy. There was a very characteristic and distinct history that about the sixth, the eighth, or the tenth week there was a history of what could be easily interpreted as a rupture of the tube. It was impractical and impossible to wait until the death of the fetus in this case for the reason that the woman for four or five days preceding her entrance to the hospital was suffering probably as much as a woman in active labor. Because of the abdominal pain being continuous and constant, it was deemed best to operate at once. A diagnosis in that case was made. She had a thin abdominal wall; you could outline the bones on the fetus, and it could be recognized as an abdominal pregnancy with a viable fetus. On opening the abdomen the fetus was easily delivered. It was viable. It lived three days. In addition to double club feet, it had cleft palate and harelip. It was impossible to remove the placenta as it was attached to the lower left half of the abdominal wall and pelvic cavity. The bladder, the pelvic wall, sigmoid, great omentum, and everything was practically in the lower left quadrant of the abdomen. For that reason there was no attempt to remove the placenta. The sac was brought up and the general peritoneal cavity closed off and packed. The placenta came away about the fourteenth day. The patient had an uninterrupted convalescence at the time. On the nineteenth day she developed symptoms of intestinal obstruction which necessitated the reopening of the abdomen. Intestinal obstruction was demonstrated; I have forgotten exactly where it was, but it was present and was relieved. Those are the essential features in the second case. This child lived three days. Both of these cases had the usual deformities as mentioned by Dr. Maury.

DR. R. L. JONES, Nashville.—As a matter of record, I want to give a meager history of a case I saw postmortem some years ago. The first part of the history was obtained from an obstetrician who saw her the first time. The patient was a negro woman, of middle age, who gave a vague history of having had severe pain in the abdomen for some weeks, for an indefinite period, after she became pregnant. At term she went into spurious labor. She had some pains, but was not delivered. The late Dr. Richard Douglas advised operation at the time, and I think he diagnosed abdominal pregnancy. The operation was on the right side.

Fourteen years later she came into the hospital in a condition of profound sepsis with her uterus the size of a six months pregnancy. She was operated on at that time by Dr. Fort, who curetted away a handful of hydatiform moles. She promptly died of sepsis. At autopsy it was found she had a lithopendion, which was situated high in the abdomen transversely with attachments back of the child to the omentum. The cord was intact. The

cord could be traced down to the region where the left tube and ovary should be, but we could not demonstrate any tube or ovary. I think an interesting feature is the long time the woman carried a dead fetus, a period of fourteen years.

DR. W. S. LAWRENCE, Memphis.—I desire to call the attention of the members of the society to the importance which the x-ray plays in the diagnosis of these cases, and I do this because it has not been possible to do so until recent times. In the last few years, since the advent of two adjuncts in x-ray work, namely, the Bucky diaphragm, our diagnostic possibilities have been very considerably improved, and I believe all these cases should be correctly diagnosed by this method. I think we can always diagnose pregnancy now in its normal location after the fourth month by this method, certainly after four and a half months. If the case is advanced if it is a normal pregnancy, the uterus will have risen as high as the umbilicus; then by turning the patient on the side in the lateral position and making plates in the right way, if it is a normal pregnancy, the fetus can be seen within the uterus. In other words, the uterine wall can be distinctly outlined if it is a normal pregnancy. You see the fetus and you see the uterus surrounding the fetus.

If you see the fetus and do not see the uterine wall, the chances are very highly in favor of its being a pregnancy of the kind referred to.

I only recently had a case which was late in the seventh month; it was not an extrauterine pregnancy. The fetus was in the normal location, and through the uterine wall was beautifully outlined the fetus, and practically every bone in that fetus could be seen and made out, particularly all of the larger bones.

DR. H. L. FANCHER, Chattanooga (closing).—I do not want to prolong the discussion. However, I

DR. YARBROUGH.—I would like to ask Dr. Lawrence as to the effect of the x-ray on the normal fetus from the first month up to the ninth or thirteenth month.

DR. LAWRENCE.—These plates can be made in about twelve and a half seconds, and the exposure was not long enough to have a detrimental effect on the living organism.

wish to thank the members for their liberal discussion of this rather serious and not very frequent condition. They have added materially to the data on the subject.

AFTER CATARACT.*

HILLIARD WOOD, M. D., F. A. C. S., NASHVILLE.

AS USED in this paper, "After-Cataract" is intended to mean those opacities that are often found in, and about, the field of the pupil following the removal of the lens, either by extraction, or by solution. The term "Secondary Cataract" is often used to mean the same thing, but it also includes other forms of cataract.

History.

So far as I have been able to learn, Panas was the first to advise and perform the extraction of the after-cataract. He recommended that the extraction be deferred for several months after the original cataract operation.

With a knife he first divided any pathologic adhesions present, and then, with forceps, extracted the after-cataract. Major Smith has often extracted after-cataract with excellent results. He makes an incision in the upper corneo-scleral junction. Through this iris forceps are passed down in front of the opaque

capsule, which is then grasped and removed. Avulsion of the after-cataract by Tyrrell's hook has been often done. For this either sharp or blunt hooks have been used.

The lens capsule, which is usually transparent even in ordinary senile cataract, rapidly becomes opaque after the removal of the lens. In inspecting the eye a few days after cataract extraction the capsule, lying across the field of the pupil, is frequently seen as an opaque veil.

As examined a few weeks later with focal light and a dilated pupil the after-cataract may be composed of any or all of the following ingredients, and in any proportion:

(a) The thin, opaque capsule only, without pathologic adhesions. This membrane may be uniform in appearance, or dehiscences may appear.

(b) The opaque capsule with remnants of lens cortex remaining attached. These are prone to be met with after extraction of immature senile cataract, and after extraction of any cataract with an insufficient capsulotomy opening. This remaining cortex, if exposed to the aqueous, tends with time to absorption, but

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if enclosed between the collapsed anterior and posterior layers of the capsule it may last indefinitely.

(c) In case of iritis or cyclitis, inflammatory products may be added to the opaque capsule and by development become masses of white connective tissue. These may add greatly to the thickness of the capsule and the reduction of vision.

Usually the above elements are mingled in varying proportions, and the after-cataract is not uniform, but shows thick and thin areas, with bands, usually running in a more or less vertical direction. The after-cataract may be united to the pupillary rim of the iris—posterior synechia; or broad adhesions concealed behind the periphery of the iris may give it a pathologic attachment to the ciliary body. These latter are especially dangerous, whether the after-cataract is operated on or not. From their traction we may get eyelitis and possibly glaucoma which occasionally follows cataract removal.

After-cataract interferes directly with vision in two ways; first, by its opacity; second, by its diffraction of light. It is surprising to what extent a thin, semi-transparent membrane may interfere with vision. I have several times had an experience similar to this: Following the lens extraction, with after-cataract present, the vision would be, say 20/100; after removing the opaque capsule the vision would be 20/30; each of these measurements taken with proper, and usually the same, correction. From this observation it would seem we gained more vision by operation on the after-cataract than we did by originally removing the lens.

The development of after-cataract depends upon the type of operation employed, the type of cataract operated upon and the complications following the extraction. Primarily, after-cataract depends upon the lens capsule. In extractions, such as extra-capsular extractions, where the capsule is left in the eye, after-cataract is common. But when the capsule is left in the eye, after-cataract is common. But when the capsule is removed along with the lens, as in intra-capsular extraction, there is no after-cataract. Indeed this fact seems to constitute the main, if not indeed the only reason for intra-capsular extraction. Extra-capsular extractions are therefore the only ones followed by after-cataract. In these immature

cataract is more prone to be followed by after-cataract than the mature cataracts. Indeed this circumstance constitutes the real objection to extracting immature senile cataract.

A small capsulotomy opening, by favoring the retention within the capsule of lens cortex, favors secondary cataract. Iritis and cyclitis, while they do not originally cause after-cataract, yet by the inflammatory effusions add immensely to the impairment of vision and the difficulties of treatment.

The methods by which after-cataracts are handled are so various, and the instruments so numerous, that it is plain no one method has proven generally satisfactory. To bring out the point I wish to emphasize in this paper, I shall divide after-cataracts into two kinds.

The first kind includes those that have marked pathologic attachment to the iris or ciliary body, or both. The second variety includes those that have no, or only insignificant pathologic attachment to either iris or ciliary body.

It is not my purpose to recommend avulsion for thick, dense after-cataracts with many firm adhesions. These have always been preceded by iritis or eyelitis, or both. Such cases are bad surgical risks, regardless of the technique employed. In these operative interference should be deferred until after all irritative symptoms have subsided. The technique finally employed will vary with the individual ease and the experience of the operator. My own preference is to use two Knapp knife-needles, which are introduced through the cornea from opposite sides. These perforate the after-cataract at the point where the opening is desired, and then by cutting with the two knives across the membrane in opposite directions, an opening may be made, with the least amount of traction on the iris or ciliary body. Very dense membranes can best be divided with the de Wecker, or other similar scissors. Whatever the technique in these complicated cases, inflammatory reaction is likely to develop and the opening temporarily obtained by the operation is soon closed by a fresh effusion of plastic lymph.

It is of the treatment of the second variety, those with few or no pathologic attachments, that I wish to speak. In handling this second variety, I have been much impressed with the ease and complete success of their extraction.

The first extraction of after-cataract I ever saw was done several years ago. I introduced a keratome through the upper corneo-scleral junction, and through this opening passed a pair of iris forceps, grasped the opaque capsule and removed it entire from the eye. There were no accidents, healing was uneventful and the resulting vision was good.

Since then I have repeated the above technic occasionally and always with satisfaction up until some three months ago. I then met with my first failure, in that I failed to grasp, and hence failed to remove, the opaque membrane. In this case an extra-capsular extraction combined with iridectomy had been done some six weeks before. A fairly opaque, and rather uniform capsular opacity had developed. With the keratome I made the usual opening at the upper corneo-scleral junction. I then introduced iris forceps and tried, but failed, to grasp the membrane. After three failures to grasp the capsule the operation was suspended, the eye bandaged, and the patient put to bed. Healing was uneventful. In thinking this over afterward I realized that my forceps had evidently passed down behind the opaque capsule, which, after the escape of the aqueous, had moved forward and applied itself against the concave posterior corneal surface.

Some six weeks later I had another similar case, in which the iris forceps, when introduced, failed to grasp the membrane. I immediately discarded the forceps and taking an ordinary capsulotome passed it flatwise through the incision, and on down between the corneal periphery and the iris; when the point had gotten on a level with the lower pupillary margin, it was passed to the pupillary area, and on the point of the capsulotome turned backward, toward and against the opaque capsule. Slight pressure on the point caused it to transfix the capsule, then drawing upward with slow traction, I brought out the entire capsular cataract. No complications followed and healing was uneventful.

After extracting the lens it is sometimes noticed that the remaining cortex is in the form of a feathery, flocculent cloud. Attempts to remove this by irrigation fail, as it seems adherent to the capsule. Forceps will not hold it as it has no consistency. I know of no way by which it can be immediately removed, unless it be by suction. However, if

left alone, it gradually consolidates with the capsule and, after several weeks, or months, forms a membrane of sufficient consistency to be removed en masse from the eye.

The length of time which this flocculent cortex will require to develop sufficient consistency to admit of its removal en masse from the eye is seldom less than ten or twelve weeks. Hence its avulsion should, in general, not be attempted sooner than this after the original cataract extraction. Indeed to wait a longer time adds to its firmness and facilitates its extraction.

Technic

With pupil dilated, and under local anesthesia, in a dark room, with brilliant focal illumination, an incision is made with a keratome at the upper corneal limbus. Through this iris forceps or capsulotomy forceps are introduced in front of the opaque capsule well down to the lower portion of the pupil. As much of the after-cataract as convenient is grasped and gently withdrawn. Another method is to use the capsulotomy, or Tyrrell sharp hook. Either of these can be passed backward to the lower pupillary field, rotated so as to pierce the opaque membrane, and the mass removed. Occasionally, when using a hook, the after-cataract will split, the membrane remaining in the eye, but with a wide opening through which the patient can see. This is especially apt to occur when not sufficient time has elapsed since the primary extraction and the after-cataract has not acquired the desired cohesiveness.

I have done this operation occasionally in selected cases, for years and have yet to see in connection with it any blood in the aqueous chamber, or any tears of the iris, or any inflammatory sequel, except one mild case of cyclitis, which occurred in a case in which I failed to remove the membrane.

Against the extraction of the after-cataract it may be argued that it may cause traction on the iris in case of synechiae, and that it always causes traction on the ciliary body. To these objections it may be said that extraction is not here recommended in the presence of marked pathologic attachments, either to the iris or ciliary body. Furthermore, in all intra-capsular extractions there is of necessity some traction on the ciliary body. Yet intracapsular extraction is not, so far as my information

goes, a fruitful source of cyclitis. Removing the opaque capsule, as in the extraction of after-cataract should not, in the absence of inflammatory adhesions, produce any more traction on, or damage to the ciliary body than extracting the lens in the capsule.

In extracting after-cataract, as here advised, I would suggest the following rules:

(a) The operation should not follow too closely the original cataract extraction, but should wait until all irritative symptoms about the eye have disappeared, and the after-cataract has become sufficiently firm, and, in any event, not until two or three months after the cataract operation.

(b) Careful search for pathologic adhesions, which search should include a consideration of the history of the case, especially as to the development of iritis or cyclitis following the original cataract operation; and a minute examination of the eye by focal illumination with the pupil dilated.

(c) The pupil should be dilated with atropine; and the operation should be done in a dark room with the aid of brilliant focal illumination.

Among contraindications for avulsion may be mentioned:

(a) Strong, dense pathologic adhesions either to the iris, or ciliary body, or both. In determining the presence of such adhesions one should have regard for the history of former inflammation, such as iritis, or cyclitis, or both; and the presence of adhesions as shown by focal illumination under complete mydriasis.

(b) The presence of ciliary injection or ciliary tenderness.

(c) Any marked increase, or decrease, of intra-ocular tension as shown by the tonometer.

DISCUSSION.

DR. MARCUS FEINGOLD, New Orleans, La.—I am sorry I did not know beforehand of the excellent contents of the Doctor's paper. There is so much food for thought in it that it is rather difficult to arrange the matter quickly and systematically in order to open the discussion intelligently.

The treatment of after cataract is, I confess, one of the most difficult problems we are meeting in operative ophthalmology. The classification of after cataract laid down by Dr. Wood into after cataracts that are almost entirely free from adhesions, and those that contain adhesions to the iris and the ciliary body, is of prac-

tical importance. The two varieties must be handled differently and the treatment which Dr. Wood recommends must, as he correctly says, be applied only to the group in which there is no adhesion to the iris or ciliary body. I have in two instances done a similar operation to that of Dr. Wood, extracting the opaque capsule, weeks after the primary operation. I was not so fortunate in both instances, however, because in one instance a silky vitreous opacity developed of the kind described recently by Dr. Ziegler, of Philadelphia, and this membrane was equally an obstacle to vision as the wrinkled, silky but translucent opacities of the capsule often are. Cataracts of the second variety, those in which we have adhesions between capsule and iris, could only be dealt with, as Dr. Wood correctly says, by some form of discission, whether we are using two knife needles, or the Ziegler method, or the iridotomy with the straight Graefe knife. The last named operation I generally prefer; it is the simplest one and the easiest to perform. In all these cases of discission of the second variety of after cataract we have to deal with one important factor, dwelt on to some extent by Dr. Wood, but which has been minimized by Col. Smith, who last year made small of the danger of cyclitis and iritis following discission of secondary cataract, and of the development of increased intraocular tension. I examined recently two patients on whom I had made discission of an after cataract years before. Both patients had retained good vision, one had five-sixths, the other had five-ninths, and both had normal tension. But when examined with the corneal microscope and the Gullstrand slit lamp, both patients showed to my surprise, a most interesting sight. A hernia of the vitreous was protruding through the opening in the capsule, and the hernia was studded with countless little brownish dots, those brownish dots which are the expression of an irritation of the ciliary body, and which may give us an explanation for the glaucoma which will develop at times in those eyes after the discission.

The best treatment to follow in after cataract is simply not to have one. We will therefore have to look to the future to give us methods which will allow all of us—not only a few chosen ones, but all of us—to extract safely and quickly all cataracts within the capsule and without any loss of vitreous, so we should not see those silky membranes that we often see following vitreous loss.

DR. E. C. ELLETT, Memphis.—The meeting of the A. O. S., last June, Col. Smith read a paper on "After Cataract," in which he advocated the extraction of the membrane, as Dr. Wood does, but he advocated it in the class of cases that Dr. Wood does not advise it, namely: in the dense membranes with adherent iris. He says that "for the mildest form of after contact, needling is generally recognized to be efficient." (Trans. A. O.

S., Vol. XIX, p. 85). For the dense membranes, he makes a sclero-corneal incision, an iridectomy, and loosens the iris from the membrane with a blunt separator and extracts it. My personal experience in the division of ordinary membranes with the Hay's knife needle, or the Zeigler modification, has been so satisfactory that I have seldom used any other method. The instrument cuts, not tears, and the V-shaped incision gapes and leaves a good opening. It is equally satisfactory for dealing with pupils closed by drawing up of the iris, and in most membranes of the denser type. I much prefer to deal with any of these conditions, when possible, by the needle operation, with its single picture of the eye, than by means of a larger incision with its greater risks. My experience is that this operation is both safe and satisfactory. In the exceptional cases, with dense membranes, I have sometimes had to extract them. A boy came to me recently with the remains of a traumatic cataract in his only seeing eye. The iris was adherent to the corneal scar, and a dense membrane occupied the pupil. With the knife needle the anterior synechiae were divided and then the membrane in the pupil was attacked, but it was so tough that it pushed before the knife and would not cut. This also showed me that in one direction, at least, and this was down and in,

the membrane was not firmly attached. At a later date a corneal incision was made at the temporal edge of the cornea and the membrane grasped with iris forceps and drawn out of the wound. It was so adherent at the temporal edge that it could not be extracted, but as much was pulled from the wound as could be done with safety, and this was cut off. The remainder slipped back and disappeared under the temporal half of the iris. The result was 20/20, and a most grateful patient. This case is detailed because in such a case extraction is necessary, but in the usual type of rather thin membranes, the V-shaped capsulotomy with the Zeigler or Hay's knife needle has been employed by me for many years with perfect safety and perfect satisfaction.

HILLIARD WOOD, M. D., Nashville, (closing).
—Mr. Chairman, when I spoke of the dense membrane, dense and adherent membranes not being suitable, in my judgement, for avulsion, I meant membranes with adhesions; it is not the density of the capsule that is a contra indication for the avulsion, but the pathologic attachments to the iris and ciliary body. It makes no difference how dense a membrane is, if it has not any pathologic attachments, it is perfectly, in my judgment, suitable for avulsion.

FOREIGN BODIES IN THE EXTERNAL AUDITORY CANAL. *

EDWIN D. WATKINS, M. D., MEMPHIS.

PERSONAL experiences in dealing with foreign bodies in the external auditory canal, first as a general practitioner and later as a specialist, prompt me to write this essay. It is written with the hope that some of the facts contained herein might be of help to others than otologists. Impacted cerumen is included, first because it is rarely pure cerumen, being a bolus of heterogeneous matter, and furthermore because it is the commonest foreign body encountered.

Foreign bodies are frequently found in the external auditory canal. No age is exempt. Almost anything that can be contained by the walls of the canal may be found. The condition may be simple or it may cause any degree

of trouble including death. The results of improper attempts at removal may and often are, more serious than the mere presence of the foreign body. Even proper treatment may eventuate seriously. Attempts at removal of a foreign body accidentally discovered, which was causing no symptoms may cause very active symptoms. Variations in the size and shape of the canal often complicate this situation. A guarded prognosis should always be given before entering upon attempts at removal.

The nature of articles found in the canal is limited only by the size of the article and the canal. Impacted cerumen, which will be considered below, is the commonest. Pieces of cotton are quite frequently found, some having been in the canal for months. Buttons of any variety are often found in the canal. It seems that children have a penchant for poking things

*Read before the Memphis and Shelby County Medical Society, Sept. 5, 1922.

into the canal and buttons are more available than other articles. Seed of any kind, especially beans, beads, pebbles and nut shells are also favorite articles for children to poke into the canal. Splinters, tooth picks, straws and earth are not uncommon. Rarer are insects, maggots, cloth and fungi. Very rarely bullets or knife ends are encountered.

The effects of the foreign body may be only irritation relieved by early removal. Obstruction may cause deafness. If the offender remains long a chronic desquamative epidermitis with epithelium discharge involving the canal alone or including the drum may ensue. Pernit discharge from drum involvement and drum atrophy may occur. Obstruction to the outflow of a chronic discharge may result in very serious consequences. Bone destruction, osteitis, otitis media, mastoiditis and meningitis may ensue. A very troublesome condition, and not an uncommon one, is swelling of the soft parts to such extent that examination and removal are rendered most difficult.

It must be borne in mind that the removal of a foreign body may not relieve the symptoms of which the patient complained, some other pathology being present. A furuncle may be the real cause of the distress or a middle ear disease may be present. Therefore, after the foreign body has been removed a thorough examination of the canal and drum must be made, in fact the hearing test should be done.

The symptoms caused by a foreign body are very variable. Occasionally some substance has remained in the canal for years, only to be discovered in routine examination. Symptoms are produced by stimuli directly caused by the substance or secondary conditions which arise because of its presence.

Deafness is variable and often surprising. It is remarkable how long and apparently completely occluding a plug of cerumen may be present with so little complaint of deafness. Deafness due to cerumen may come on suddenly due to the mass becoming wet and swelling so as completely to obstruct the canal.

Autophony, the accentuation of one's own voice, is complained of. Tinnitus is variable, sometimes very distressing, especially when the substance is deep in the canal. Cough is frequent, so much so that whenever a patient

comes to me complaining of an irritative dry cough I examine the ear canals before I do the larynx. This is supposed to be due to the communication between Arnold's nerve and the pneumogastric. Aprosopia is especially common in long standing cases of impacted cerumen. Dizziness is more common when the substance is not in contact with the drum. Numbness of the side of the head is sometimes complained of.

Hemorrhage from the canal is not unusual. It may be due to laceration or be a result of a ruptured furuncle. Right here it is well to caution to always examine the canal in cases of fracture of the base of the skull when there is bleeding from the canal. The bleeding may be due to a foreign body which gained access to the canal at the time of the injury of the head, and if left undisturbed might produce much harm. I saw one such case at the Presbyterian Hospital in New York. The patient was brought into the hospital after having fallen from a wagon. He was unconscious and bleeding from the right ear and nose. Examination of the ear canal showed a piece of coniform granite jammed deep. It was removed with difficulty but no symptoms resulted from its presence.

Live insects cause intense symptoms. The irritation is sometimes hardly bearable. If one touches the drum it causes loud noises and much pain. Dead insects act as any other foreign body.

Pain is variable according to the size, nature and position of the substance. Severe pain is caused by contact with the drum or the sudden swelling of some such object as a bean. Neuralgia of the whole side of the head sometimes occurs.

Epileptiform attacks and blepharospasm have been reported.

The diagnosis is made by inspection or the careful use of the probe. With the best obtainable illumination the canal is examined with or without a speculum. If a suspicious object is seen it is perfectly good technique to touch it with a probe. If the soft parts of the canal are too much swollen to allow inspection it is justifiable to probe gently and superficially in the canal. X-ray examination is helpful in a very limited number of cases.

The greatest care must be exercised to see into all parts of the canal. Do not be satis-

fied with the examination until certain that the anterior inferior angle of the canal has been seen into. Very small objects are easily overlooked when in this situation.

If the examination cannot be made satisfactorily without a general anaesthetic then one should be administered, but before administration everything should be made ready to remove any foreign substance found on examination.

Impacted cerumen presents various appearances. It may be a plug occluding the canal and simply present a dark brown surface. Again there are isolated pieces or only one piece firmly adhered to a part of the canal or drum.

Treatment is of course, removal with as little damage as possible. This is quite simple but at times taxes the surgeon's skill as much as anything in the entire realm of the art.

Two fundamental principles are certain. The syringe is by far the most useful instrument. Never attempting to remove a foreign body from the canal of a child without general anesthesia. You may be successful now and then without it, but you will have cause to regret it sooner or later.

The syringe should be sterile and the solution sterile. Boric acid solution is as good as anything. Direct the stream so as to go beyond the substance in order that the return pressure may force the substance out. In case of cerumen hugging the entire circumference of the canal or an object that has swollen to the same result, some separation must be made to permit the stream to reach beyond the object. This is usually best effected with the small hook, much like a crochet needle, working from the posterior superior aspect of the canal. Once an opening is made the stream of fluid will dislodge the object and force it out.

The least inward pressure on the object may push it beyond the angle of the canal and if it happened to fit closely at the angle there arises a serious situation. Sometimes it is possible to insert the hook between the canal wall and the object and by outward traction to dislodge and remove it. Quire's instrument is at times useful and should always be at hand.

Occasionally an object is of such shape that it may be grasped with forceps and extracted directly. In this condition use as strong forceps as can be applied.

Occasionally an object must be removed in pieces. The object may be cut with the ring forceps or possibly with the aural or nasal snare. Sometimes the snare wire can be passed back of an irregular object and then internal to it and by outward traction, removal effected.

The adhesive methods, have never given me satisfaction. Any strong adhesive material is placed on an applicator and then applied to the foreign body and allowed to harden with the hope that removal may be brought about.

Insects if dead may be syringed out or removed with forceps. If alive they may be drowned in mineral oil introduced into the meatus. They can then be washed out.

Impacted cerumen may often be syringed out easily. If it does not come out easily on syringing the best method of removal is to apply hydrogen peroxide to the mass. Wrap small pieces of cotton on tooth picks and after saturation with the peroxide swab away at the mass until all is removed. In case of a mass of cerumen adherent to the drum gently pass such a swab in to the mass and allow it to lie in contact with the mass until all is dissolved. I find it better to remove masses or hardened cerumen adherent to the wall of the canal by this method rather than to use a spoon. Always remove every bit of cerumen. This need not be done at the first sitting. The patient may become tired and nervous and sometimes I find it better to finish the work the next day.

After the removal of the cerumen apply to the canal wall. 1 to 500 solution of acriflavine. Since using this solution I find recurrence of the wax much less frequent.

In case all these methods fail to effect removal of a foreign body, especially if it is internal to the isthmus, removal must be done by separating the soft parts from the bony canal and if necessary the removal of enough mastoid process to allow delivery. But this is work for the otologist and need not be gone into here.

REPORT OF AUTO-TRANSFUSION.*

MURRAY B. DAVIS, B. S., M. D., RESIDENT SURGEON, NASHVILLE CITY HOSPITAL.

LOOKING over the literature I was unable to find very much written about auto transfusion. Ogilvie of Guy's Hospital reports one case, Sampson of the General Hospital, Birmingham, England reports one case and mentions another case he witnessed in the Base Hospital in France.

R. N. Col. age 33, was admitted to the Nashville City Hospital 11:30 P.M. Sept 9, giving a history of 3 hours previously, having been shot in a pistol battle.

Summary of Physical Examination.

Was a well nourished colored man, profoundly shocked, with a bullet wound at the level of the 8th rib on the left side 3 or 4 inches from the middle. There was another bullet wound on the left side of neck just above the clavicle and a punctured wound in the forehead. Eyes, mouth and teeth were negative. Heart sounds were weak, no murmurs or irregularities. Radial pulse barely perceptible. Chest, negative; abdomen, not distended, no masses made out, but there was a marked rigidity, more pronounced in the left upper quadrant. Physical examination otherwise negative. Patient was sent to operating room at 12 P. M. almost pulseless. Under ether anaesthesia, a high left rectus incision was made and on opening the peritoneum a large quantity of blood gushed out. The whole peritoneal cavity was apparently filled with blood. This was mopped up with dry abdominal pads and these were then squeezed into a sterile basin into which previously had been placed some citrate solution. A little over 600 c.c. of non-clotted blood was obtained in this manner.

There was a punctured wound of the spleen which had apparently stopped bleeding at the time, probably due to his low blood pressure. One bleeding vessel was found and ligated. The stomach and the entire gastro-intestinal tract was inspected hurriedly and no perforation found. Wound closed layer by layer. Two cigarette drains were put in.

The blood that had previously been recovered from the peritoneal cavity was strained through five or six layers of gauze, saturated in citrate solution, and 600 c.c. were given in the median basilic vein.

The anesthetist reported during the transfusion that the patient's pulse was improving. He was carried to the ward and 1,500 units of tetanus antitoxin was given. 12 hours after operation pulse was 82, temperature 99, and for seven days he ran practically a normal pulse and temperature chart. On the 7th day following the operation patient had a wound separation. His Wassermann was four plus. He was again taken to the operating room, anesthetized and wound resutured. Active antiseptic treatment was started. On the 9th day he developed physical signs of bronchopneumonia on both sides and died on the 10th day.

Although this case terminated fatally, transfusion served its purpose for which it was done and I see no reason why it cannot be used in ruptured ectopics, where you have no active inflammatory process in the pelvis, in traumatic ruptures of the spleen and splenectomies where large quantities of blood are spilled in the peritoneal cavity, stab wounds of the liver, traumatic hemothorax, and gunshot wounds of the liver and the spleen, where the gastrointestinal tract is not perforated.

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, October 3, 1922.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

OCTOBER, 1922**REVERSION OR PROGRESSION.**

In another space in this section of the Journal may be found an editorial by the Dean of one of the leading medical schools of the South. To those who have noted the trend of medical education in the past decade this article can not but seem to have a reactionary atmosphere.

Coincident with the inauguration of the plan of standardizing medical schools of the United States by the American Medical Association, came the system of all-time teachers. This system began with the employment of instructors who devoted their entire time in the teaching of the so-called fundamental branches of the medical curriculum such as anatomy, chemistry, physiology, pathology, bacteriology, etc. It was then extended to include the practical branches such as medicine, surgery, etc. It seemed, heretofore, in some quarters and by those who directed the trend of medical education, and presided over the destiny of medical schools with a golden scepter, that the avowed purpose was to have medicine taught on the university plan, i. e.; as a college of arts of an university is conducted. As yet no medical school in the United States has attempted medical education on the university plan. And for one very good reason,—they haven't sufficient funds. But it has been tried on a scale sufficiently extensive for at least some of the students of medical education to doubt the wisdom of its adoption, especially in the practical branches. Public utterances have been made by such students and teachers as Dr. J. B. Deaver, Dr. A. D. Bevan, Dr. J. A. Witherspoon and others, against the university plan and it must be remembered that these men have given their whole lives to medicine and medical education.

As a result of the innovations in medical instruction a new type of physician is being

made. Whether they are better or worse than those graduated formerly we shall not discuss now. The American Medical Association tells us yearly, and proves it statistically, that there are even now too many physicians per population in the United States. And this may be entirely so; but we know there are not enough physicians in the rural communities of Tennessee. And by the same token we firmly believe that there are too many physicians in the larger towns and cities of the state.

What is the answer to this condition of affairs which is growing more acute as medical education "advances"? One explanation may be had in the study of the life history of the average medical student. He must be above the average intelligence of the boys in his community for he graduates from his local accredited high school at a reasonably early age. He enters an university, which is usually located in a large city, and finishes the required two years of a specialized pre-medical course. (Some medical schools require a B. S. or A. B. degree which necessitates four years.) He then enters the medical school and is intensively trained by a group of specialists. Great stress is laid on the laboratory findings of a case and, human being that he is, we find him taking the "easiest way." If a case is suspected of having a duodenal ulcer, the student will immediately ask what the x-ray report showed; if malaria, were the parasites found, etc.

The student is finally graduated and he takes up a residence in a hospital. This is in a large city also, for the small hospitals go begging. He has now had at least seven years residence in a large city. By the very reasons of his latest environments and his scientific training he is utterly unfit to repair to the sparsely settled communities and begin the practice of his profession. And even so, were it possible for his financial return to be as munificent had he become relatively as successful in a city. The small community does not and can not furnish him with the necessary facilities which are essential to him to practice at all. For financial reasons he can not provide himself with these facilities even were it possible for him to utilize them to their fullest benefit. In the mean time he has become enamoured of the city,—and by

this is not meant, necessarily, the gay life to the city. The cultural and educational advantages of the city appeal to the young man of education in no less measure than the lack of these in the rural communities are abhorrent to him.

While all are cognizant of the great good that has been done the country by the American Medical Association in ridding it of the proprietary medical school, or diploma mill, yet the problem of supplying all of the people with trained physicians to care for their ills has not been solved. The imperative need of of the present is the well trained general practitioner.

J. F. G.

MEDICAL EDUCATION.

MEDICAL education in the United States has made a wonderful advance in the last fifteen years. A large number of undesirable schools have been closed, and the remaining schools that exist at the present time are, for the most part, rated in Class A. The credit for this wonderful advance in medical education is due largely to the Council on Medical education of the A. M. A.

At the present time there exist in this country sufficient schools to educate the required number of students to fulfill the needs of all communities. The problem now is to give the students the proper education, and the question is—are they obtaining it? The advance has been so rapid that naturally many mistakes have occurred, and is it not now time that medical educators should take stock and consolidate the positions taken in this rapid advance? The minimum requirements of two years of premedical work and four years of medical training will never be lowered, but is it not advisable to make many changes in the curriculum of the premedical and medical schools? The young men that are now turned out are walking encyclopedias at the time of their graduation, but are they capable of taking up the burdens of general practice and fighting the battles? I feel that the graduates of the last few years are not the strong, virile, ambitious young men that were turned out in years gone by. Granting, for the sake of argument, that this is correct, what is the cause

and what is the remedy? The premedical course should take over several subjects that are now taught in the school of medicine and other nonessential subjects should be dropped from the premedical course. Bacteriology, a certain part of Anatomy and all of the Chemistry should be completed before the student takes up the study of medicine. If this is done it will relieve the congestion incident to the medical course and give the student an opportunity to absorb and retain what is given him. In the medical school a student is compelled to take lectures, stand examinations on all the specialties and each teacher impresses on the student the necessity of knowing the minutiae of each special subject. If the medical school would aim to turn out only general practitioners, a step in advance would be taken. Too much stress is laid on laboratory and research work with the idea of turning out scientists. Medical men should realize that all learning is science and the most important part of medical science is the clinical history and physical signs, with the laboratories and x-ray used as an aid. There is a mania for everything to be taught by fulltime men. Is this wise? Do students receive the same impetus in their work from fulltime men as they do from men who have fought the battles of life and the battles of the profession and have been successful? In many schools the fundamentals, such as Anatomy, Bacteriology and Chemistry are taught by men that are not even doctors. Would it not be better if clinicians who are not full time men were connected with the laboratories of Chemistry, Bacteriology, Pathology and Anatomy? Would they not be able to impress on students the actual necessity of these branches in a practical way, much better than the fulltime men or those that have not even had a medical training? Many of the best surgeons in the past have received their medical training in the dissecting room. Many of the successful practitioners of today received their training in the laboratories of Pathology, Bacteriology and Chemistry. The profession in the future has some grave problems in front of it and none, to the writer's mind, that is of such importance as medical education.

L. E. B.

WE START TO DIE AS SOON AS WE ARE BORN! BUT WHY HURRY THE PROCESS?

These headlines present a rather startling conception of life. That conception is none the less literally true.

Equally true, is the fact that a careless attitude toward essentials of living—a remarkable failure to put into use established means of conserving health and vigor—provides true grounds for the question above.

We speak with bated breath of thousands killed in battle—and don't even discuss or notice the fact that hundreds of thousands of lives are hurried to an end each year, by absolutely known and preventable causes. We'll thankfully go to a hospital for six, or eight or ten weeks, to recover and convalesce from typhoid or dysentery. But wouldn't give the few hours of time and the few moments of thought which, given by enough of us, would control these diseases almost to the point of extinction. We'll collectively spend hundreds of thousands of dollars to build tuberculosis sanatoria. And we won't spend a few moment's time, personally, to educate a sufferer of the disease—ourselves or another—in the means of preventing its spread.

Figures available, from sources that are beyond question, show that more than 250,000 deaths, not to mention 4,500,000 cases of sickness each year, result from neglect of simple and practical means to prevent the spread of typhoid, dysentery, summer complaint, and hook worm. Thus, in our national neglect of sanitation—in which each of us has his individual share of guilt of what amounts to murder—we allowing ourselves to be killed, each year, in numbers which far exceed the total loss of life in the A. E. F. during the World War.

The research department of the Indiana State Board of Health indicts the out door toilet as responsible for 85 per cent of the cases of typhoid. In Johnstown, Pa., as early as 1915, research of the Children's Bureau of Washington, D. C., turned up these facts: In homes where bathtubs were found the death rate of babies was less than half of that in homes without them. In homes where there was a water closet the death rate was 108.3 as against 169.3 whether they were only yard privies. If these facts say anything at all,

they shout aloud, "Spread the knowledge and the means of sanitation; insist on safe disposal of sewage and protect water supply from defilement."

Surely it's high time to move along the line of ending this heedless waste of life and health. The National Good Health Week movement is one in which we can all take active part, spreading the idea of better health protection, and extending knowledge of ways and means to that most desirable end. Every time we put into use any of the perfectly available means of modern sanitation—every time we educate and inform our neighbor regarding them—we reduce our own hazard of bad health and help to raise the life expectancy of every member of our families and our communities.

THE EYES OF SCHOOL CHILDREN.

A prominent educator in addressing the Eye Sight Conservation Council stated:

"The conservation of eyesight with the school children is a necessity. Accuracy of vision has a vital relationship to integrity or obliquity, not only in the field of vision, but in the moral field. Of the 24,000,000 school children in the United States not more than a third receive reasonably adequate tests of vision, and not more than a third of those who are tested have these defects of vision adequately and properly corrected. It is impossible to measure the loss that this neglect causes to the individual, to the community, to the nation, as a whole. What economic loss, how much loss to science, to art, to invention, to literature; how much loss in the way of preventable illness, misery, and physical disability, dependency, occurs through the neglect of the human vision. The defects of vision in children represent one of the most hopeful divisions of physical defects which the children present us. A large per cent can be effectively corrected with less expense and less difficulty than perhaps is true of any other defect. It is necessary to impress the school teachers with the importance of eye cure and of regard for the way in which their pupils are using their eyes. The schools of this country are going slowly. They need help. The rapid development of interest, in range, and

intensity, of educators, of school officials, of superintendents, principals and teachers over this land is impressive. They can't do it all, they can do relatively little. When it comes to the whole problem of a national program they must be helped. On the outside a good deal of vigorous, enthusiastic and sane publicity, and education, to awaken people to an appreciation of the facts and value of the eyes of the children is needed. The mass of parents in this country have little appreciation of the importance of the needs of the children and of what should be done for them. This problem will never be solved until all are willing enthusiastically and unselfishly to co-operate. The community, the school, the state, and the nation can do nothing less than that."

PRORATING ANNUAL DUES

In some of the Component societies of our State Association, there has been discussion of the subject of prorating annual dues of those who are admitted to membership in the latter part of the year.

The attention of those interested is invited to an article entitled "Annual Dues Prorated" from the A. M. A. "Bulletin," of Oct. 15, 1922, which appears in the "Miscellaneous" columns of this Journal.

DEATHS.

DR. B. B. BROCK.

Born in Lincoln County, Tenn., July 12, 1851. Dr. B. B. Brock equipped himself for the practice of medicine and graduated from Vanderbilt Medical College. For over fifty years he practiced his chosen profession in the village of Blanche, Tenn., and its vicinity, retiring from active practice in 1913. He died Aug. 9, 1922 after a long and useful life well spent in the interest of his fellow men. He was a member of his County and State societies and was an honor to the medical profession, being at all times an ethical Christian gentleman as well as an efficient physician.

DR. A. G. HAYES.

Dr. Garland Hayes was born at Cold Water, Tenn. Oct. 9, 1879 and died Sept. 3rd, 1922. He graduated from the University of Tennes-

see in 1901 and practiced medicine in his home community for over twenty years. He was a fine physician and medical student, keeping well posted with the latest advances in his profession and spending several months in Post-graduate study at Tulane Medical College at frequent intervals. He was a member in good standing of his County, State, and American medical societies, and will be greatly missed in his community. He leaves a widow but no children.

KNOX COUNTY MEDICAL SOCIETY.

The Knox County Medical Society "Bulletin" announces a "Jubilee" for its next meeting, where fifteen-minutes talks will be given by Dr. Nash, on "The Relation of the Doctor to the Community in which he practices." By Dr. Sheddan, on "Organized Medicine." By Dr. Sam Hodge, on "The Doctor as a Citizen." Dr. Zemp is to cheer the body by fifteen minutes of "After the Clouds Pass, the Sun Shines."

THE MIDDLE TENNESSEE MEDICAL ASSOCIATION

The Middle Tennessee Medical Association meets at Murfreesboro November the ninth and tenth.

Officers—

W. H. Witt, M. D., Nashville -----President
J. O. Walker, M. D., Franklin --Vice-President
H. H. Shoulders, M. D., Nashville --Secretary

Judging from present prospects there will be a record attendance. There should be a large attendance. Murfreesboro is easily accessible to all points in Middle Tennessee,—by rail and automobile. The doctors of Rutherford County very urgently requested this meeting and assured the members of a hearty welcome and every convenience. A reason more urgent than these however is this: One cannot attend a medical meeting anywhere and find the program so filled with purely scientific work. Almost every moment of the time is devoted to scientific work. Almost as many papers will be read as are read at the big society meetings like the A. M. A. and Southern. The whole subject will be covered more thoroughly. The discussions will be as apt and spicy. There will be features of

special interest to many and of general interest to all. It will not be a program designed by specialists to teach the general practitioner. The general practitioner can teach a lot. His is the broader view. His contacts are varied, his ingenuity often taxed. His native ability and resourcefulness most often brought into play in solving problems which confront him. General practitioners are urgently requested to prepare papers. Preference is given them on the program. The specialists can fit in in discussion to good advantage. It's the combined judgement that offers the most safety and the best end result.

Please don't hesitate about sending in the title of your paper to the Secretary.

A word about dues. They are paid once a year, either in May or November. Those who paid in May will not pay in November. New members pay \$3.00 old members \$2.00 per annum.

Remember the date. Make your plans to be there. Urge upon those who have not attended recently to attend this time. It will be worth their while.

H. H. Shoulders, Sec.

MEDICAL NEWS AND NOTES.

Tri-State District Medical Association.

The Tri-State District Medical Association, comprising the entire states of Iowa, Illinois and Wisconsin and Districts of surrounding state will hold its Annual Assembly at Peoria, Illinois, October 30, 31, November 1 and 2.

The entire time of the Assembly will be taken up with scientific addresses, essays and diagnostic clinics.

Many of the most eminent members of the profession from all parts of the United States will take part in the programme. The Tennessee physicians are cordially invited to attend.

PROGRESS OF WESTERN MEDICINE IN CHINA.

"Looking back over the past ten years," says Mr. Roger S. Greene, in his report as Director of the China Medical Board. "it is clear that medicine in China has made real progress. The increased effectiveness of medical schools and hospitals, the development of

an active Chinese medical association under enlightened leadership, and the growing interest in the Chinese people in Western medicine and public health, are sources of satisfaction to those who hope to see the Chinese people in possession of a specific, well-rounded, and complete system of medicine."

Striking evidence that the pioneer work of foreign schools and colleges in China is bearing fruit is also found in the organization in 1921 of a purely Chinese national health association.

CONTRAINDICATIONS TO TONSILLECTOMY.

Dr. Samuel Cohen in the "Medical Record" of February 25 1922 discusses the removal of tonsils and gives the following contraindications to operative procedure:

1. Age. Tonsils should not be removed before the age of two, unless some special indication exists.

2. Patients having fever or albumin in the urine should wait until these are cleared up before being operated upon, if possible.

3. During an epidemic, it is unwise to remove tonsils.

4. When vascular anomalies are seen or felt in the tonsillar region, pointing to large blood vessels, being in direct relationship with the tonsils, the removal of the latter is fraught with great danger.

5. Hemophiliacs, or those known to bleed very much after the slightest cut, are endangered by the operation of tonsillectomy. The author always asks his patients before operating as to their bleeding propensities, and if possible have the blood coagulability taken.

6. Operating during an attack of acute tonsillitis or of peritonsillar abscess the author believes to be unwise. These patients take ether poorly and injection of a local anesthetic is rather dangerous, to say the least (pushing infection, as it may, into surrounding tissue and opening up nature's protective wall.)

7. All conditions wherein the giving of a general or local anesthetic is dangerous are to be classed as contraindications to tonsillectomy. The key to this part of the topic lies in the question, "Is the danger run justified by the possible benefits to be derived?"

8. The author always tries to avoid a ton-

silleectomy in cases of atrophic rhinitis.

9. Syphilitics should not have a tonsilleectomy performed unless in the most extreme urgency.

10. Tonsilleectomy in the presence of badly diseased teeth, or of an acute infection in or about the mouth, is to be avoided, when possible.

By Samuel Cohen, M. D., Medical Record, February 25, 1922.

THE INDICATIONS FOR TONSILLECTOMY

Tonsilleectomy is at present undergoing a stage of enthusiastic acceptance. Regardless of the function of the normal tonsil, the real problem in medicine is the baneful effect of diseased tonsils as a factor in undermining health. A relation of tonsillar disease to endocarditis, rheumatism, chorea and arthritis is generally accepted.

As is so frequently the case when the beneficial effects of a procedure are established there is a tendency to over-emphasize its importance. It is not unusual, therefore, that tonsilleectomy should be attempted when the actual necessity for it does not exist.

Experience has shown that tonsils that are not diseased begin to diminish in size during the puberal period.

It is fair to state that diseased tonsils should be removed, but there should be certainty that this reason for the removal actually exists. No one will question the wisdom of tonsilleectomy after a history of frequent attacks of tonsillitis, or after an attack of quinsy. When the enlarged tonsils are obstructive to the breathing or to voice production, their removal is indicated. If rheumatism, cardiac diseases, arthritis follow in wake of tonsillitis, the removal of the tonsils is justified as the elimination of the possible cause. When a chronic otorrhea exists or there have been repeated attacks of non-purulent irritation of the ear-drum, there need be no hesitancy in sacrificing the tonsils as a measure to prevent the possibility of increasing the diseases of the ear with the danger of a consequent deafness. If there be enlarged glands of the neck or posterior pharyngitis, the removal of the tonsils is indicated. Even though the tonsils be small, when they are embedded and

interfere with the Eustachian tube drainage, or when there are marked adhesions between the pillars and the tonsils, and certainly when pus may be expressed from either tonsil, tonsilleectomy is advisable. As a matter of routine it is advisable that the adenoid tissue be removed at the time of the tonsilleectomy.

These definite indications for tonsilleectomy established a reasonable degree of certainty in the mind of intelligent operators. Practically every child is born with tonsils and adenoid tissue. Many individuals appear to have the impression that every tonsil is a pathologic growth, for which the only treatment is removal. This is contrary to the facts.

Inasmuch as the removal of tonsils and adenoids presents definite hazards, the operation should not be undertaken without justification.

Editorial: American Medicine, July, 1922.

GOOD HEALTH WEEK.

Keeping workers from the scrap heap by the early discovery of tuberculosis and other diseases which are coming more and more to be recognized as industry's greatest foe, by providing proper working conditions and by educating working men and women to the importance of personal hygiene will be among the points to be emphasized during Good Health Week, which is to be observed throughout the United States October 23-30.

The intimate relation which man's health bears to labor turnover and to accidents and the part which ventilation, sanitation, and cleanliness play in increasing the health and efficiency of workers are subjects which are receiving special attention from the national executive committee and its advisory council in charge of the promotion of Good Health Week. That there is a growing appreciation of the fact that poor ventilation, poor sanitation, and poor lighting mean decreased production is evidenced by the manner in which large employers of labor are giving active co-operation in the educational movement whose purpose is better health.

Dust hazards, the diseases in which they are a factor, their costliness to industry, and the importance of handling them properly and of removing the dust as nearly as possible at its source are being given special consideration.

Effort will be made both to call the attention of employers to the importance from the cold business standpoint of dollars and cents of improving ventilation of factories and workshops where it is not satisfactory and to impress working people with the urgency of having plenty of fresh air in their homes, and of making sure to have some out of door exercise every day.

It has been said that although man prides himself on being the most intelligent of all animals, he needs the greatest guidance for his safety. Good Health Week is an effort to place the guidance of the best and the most scientific knowledge of the times within his easy reach.

HELIOOTHERAPY.

The action of far ultraviolet light on normal tissues and the action of near-ultraviolet light under certain pathologic conditions have been investigated enough to show that there are well defined effects due to light, closely related to the physiologic results of exposure to radium and the roentgen rays.

Recently, Kramer, Casparis and Howland have again demonstrated the healing of the rachitic process in the bones of rachitic children through systematic exposure to the rays from the mercury vapor quartz lamp. The healing of the bones occurred at about the same time that it does after the administration of cod liver oil. The work of Finssen in the treatment of lupus vulgaris emphasizes the importance of considering a diversity of forms of radiant energy in skin affections. In tuberculosis, especially surgical tuberculosis heliotherapy has long had advocates. Light of short wave length, which is known to have marked bactericidal effects, may not be without salutary influence in the treatment of wounds. Artificial lights, if glass covered, are therefore harmless and therapeutically weak. Sunlight rarely contains enough far ultraviolet rays to produce injury. Consequently, heliotherapy that demands highly potent effects must look to artificial sources of radiation. The quartz mercury arc and bare metallic arcs are known to belong in the potent class, and, it is to be remembered, may be extremely injurious, so that the eyes should

be protected from them. (Jour. A. M. A., Sept. 2, 1922, p. 827.)

ANGOSTURA BITTERS.

Newspaper advertisements for Angostura Bitters state that Dr. W. C. Wile, formerly vice-president of the American Medical Association, testified that he used the preparation in his practice. Dr. Wile was fourth vice-president, thirty-six years ago. Dr. Wile was in the nostrum business himself and wrote many testimonials. The attitude of the American medical profession toward such as those credited to Dr. Wile is entirely different today from that of thirty-six years ago. According to the label, Angostura Bitters is made from pure rum, containing about 45 per cent of alcohol. (Jour. A. M. M., Sept. 23, 1922, p. 106.)

THE WASSERMANN AND PRECIPITATION TESTS.

Although numerous modifications of the Wassermann test have been proposed, an efficient simplification is still wanting. The entanglement of amboceptor, complement, antigen, serum and cells constitutes a Gordian knot which biochemists and serologists have failed to unravel in sixteen years. Pipetting, diluting, titrating and injecting are tedious, technical procedures. Iceboxes, centrifuges, incubators, shaking machines and animals are expensive and cumbersome equipment. Nevertheless, complexities and encumbrances have failed to obscure the value of the test, and have charmed rather than discouraged investigators. Recently, after years of study on standardization Kolmer¹ adopted a complement-fixation technic less simple than the methods in use heretofore. His primary incubation period is from fifteen to eighteen hours. The antigen is a cholesterolized and lecithinized alcoholic extract of the dried powder of several heart muscles. The test unit of antigen is ten antigenic units, and this amount is at least twenty times less than the anticomplementary and hemolytic units. Schamberg and Klauder,² in a series of 2,000 tests, found the Kolmer technic distinctly more sensitive than the older methods. They observed no false positive reactions. Shivers,³ in a series of 320 tests, likewise found it more sensitive

and reliable, and states that it gives positive reactions earlier in primary syphilis, and is much slower in becoming negative when the patient is under treatment. It would seem that Kolmer has succeeded, at the expense of simplicity, in increasing the efficiency of the complement-fixation test, although it is a disappointment to learn that simplification of the test was apparently impossible. If generally adopted, Kolmer's technic will commit the serologic diagnosis of syphilis definitely of the trained worker and the highest type of laboratory. The Wassermann test will be, as it is to some extent now, a full-time job. Whatever happens, it will not be discarded until an equally dependable but simpler test has been introduced.

The time, labor and expense involved in the complement-fixation test has led to the proposal of various other tests for the diagnosis of syphilis. Meiniske, in 1917, and Sachs and Georgi, in 1918, introduced procedures which employ only serum and antigen. In these tests the end-result with a positive serum is a precipitate. Their difficulty is a forty-eight hour incubation period, during which the serum frequently becomes contaminated, and thus leads to false interpretations. Wang² also proposed recently a precipitation test. His antigen shows a slight turbidity on dilution with physiologic sodium chlorid solution, and thus renders doubtful the interpretation of weak reactions. Still more recently, Kahn³ introduced a precipitation test which is relatively free from the foregoing objections. A definite precipitate appears in Kahn's test within five minutes in nearly 80 per cent of serums giving a four plus reaction with the Wassermann test. While this is a distinct advantage, the final readings, especially of the weaker serums, are not made until the following morning. Kahn claims that his method is more sensitive than the Wassermann test in hereditary syphilis and in treated cases of this disease. Keim and Wile,⁴ in a series of 350 unselected cases in which the Wassermann and Kahn tests were made side by side, found that the latter compared favorably in sensitivity with the Wassermann test. Finally, Herrold⁷ has proposed a simple modification of the Kahn test in which a contact precipitation, or ring, appears at the juncture of serum

and antigen. The final reading is taken after one hour. In a comparative test with 24 serums, the complement-fixation, the Kahn, and the ring precipitation tests agreed in 95.5 per cent of the serums. The final determination of the value of the precipitation tests can be made only after a large number of trials, especially with doubtful serums, but it appears that the serologic diagnosis of syphilis has been simplified as well as sensitized.—*Jour. A. M. A.*, Sept. 23, 1922.

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HEALTH FALLACIES.

N. Y. State Department of Health.

Before disease germs were discovered, a great many fanciful ideas were advanced as to the cause of disease and the mysterious way in which infections spread, sometimes with lightning like rapidity. Today with the organisms causing most of the infectious diseases identified and the ways by which they are spread known, these old fanciful ideas seem ridiculous to us; and yet some of the popular ideas of today regarding disease and its prevention and health and its preservation are just as ridiculous and absurd when viewed in the light of our present knowledge. In fact, most of these popular ideas of today are relics of the past.

One of the most common of these health fallacies is the idea that "filth breeds disease." As a matter of fact all disease germs affecting the human race require a tempera-

ture somewhere near that of the human body before they will multiply. This means that they do not increase in numbers to any extent outside the body but actually die off rapidly as they find conditions unsuited to their growth. Filth then, does not breed disease although it may carry it, as when undisinfected typhoid discharges find their way into public water supplies.

Do not get the idea from this statement, however, that cleanliness is not still to be considered as next to godliness, for it has been shown time and time again that persons who spread such diseases as typhoid are usually people of filthy or unclean habits.

Another health fallacy still exists in regard to sewer gas which was long supposed to be the cause of diphtheria. This mistaken idea was formerly held not only by people generally but by many health officials as well. Bear in mind every case of diphtheria comes directly from a previous case of diphtheria or diphtheria carrier and from no other source.

Not only sewer gas, but bad odors in general are commonly supposed to be detrimental to health. Such odors may be unpleasant, they may even upset the stomach and make one feel ill, but they have never in themselves caused infection or disease. They are useful in pointing out where decay and putrefaction exist however, and instantly tell us when food has gone beyond the point where it is fit to eat.

Speaking of odors and their relation it is a curious fact that in the public mind the solution with the strongest odor is often thought to be the best disinfectant. Some of our best disinfectants are odorless or nearly so. On the other hand some of our weakest and most worthless disinfectants have a very pungent odor. Don't be deceived by the advertisement of some manufacturers who for their own ends would have us believe that everywhere about us, in our offices or home, are disease germs ready to infect us unless their solution is used. Cleanliness, soap and water and sunshine are three of our best and cheapest disinfectants.

During the influenza epidemic it seemed to be quite a common thing for people to carry a little piece of camphor with them to ward off infection. It would be interesting

to know who started this custom and why. Camphor will drive away moths but so far as known has no more effect on influenza than horse-chestnuts have on rheumatism.

ANNUAL DUES PRORATED.

At a recent meeting of the Council of one of the state medical associations it was decided to receive new members into the Association after July 1 and before October 1 upon payment of three dollars, and after October 1 upon payment of two dollars, rather than to require new members coming in after the dates mentioned to pay the whole amount of the fixed annual assessment which is five dollars. This same arrangement with respect to new members has been put into effect in several state associations. There is a question in the minds of some who are not without experience in medical society affairs as to the wisdom of this procedure.

The man who is eligible for membership in his county medical society and state association should be brought in as soon as he becomes eligible. If this happens to be on June 1, it is probable that he will be inclined to wait a month if thereby he can save two dollars of his good money. If it happens that he becomes eligible for membership on September 1, when he finds that just one month later he can qualify upon the payment of one dollar less, he will be inclined to postpone his application for one month. No doubt this statement of the case will be disputed by some who read it, but ask the man who knows, the fellow who has been in the secretary's job for a long time, and hear what he has to say about it.

It is true that there should be some concession made to the man who is not eligible to membership until six months of the year has gone by. It is doubtful that the man who has been eligible all the time, but has withheld himself from membership, is due any especial consideration. And it is also doubtful whether there should be any further splitting of dues for the new member after July 1. Would it not be better to prorate the dues in the second year rather than in the first year in all cases for new members? If this procedure were followed in the case of all new members coming in after June in any year, incentive to postpone affiliation would be removed.

Whatever arrangements are made by the officers of a state association with respect to the payment of dues, which, by the way, are fixed by annual assessment on each member, should be altogether in keeping with the action of the individual county society. If a member is accepted by the state association on a pro rata basis, he should receive like consideration from the county secretary should remit to the state association accordingly.

A. M. A. Bulletin. October 15, 1922.

BOOK REVIEWS.

SYMPTOMS OF VISCERAL DISEASE.—

A study of the vegetative nervous system in its relationship to clinical medicine. By Francis Marion Pottenger, A. M., M. D., LL. D., F. A. C. P. Medical director, Pottenger, sanatorium for Diseases of the Lungs and Throat, Monrovia, California. Second edition. With eighty-six text illustrations and ten color plates. Cloth. St. Louis; C. V. Mosby Co., 1922,

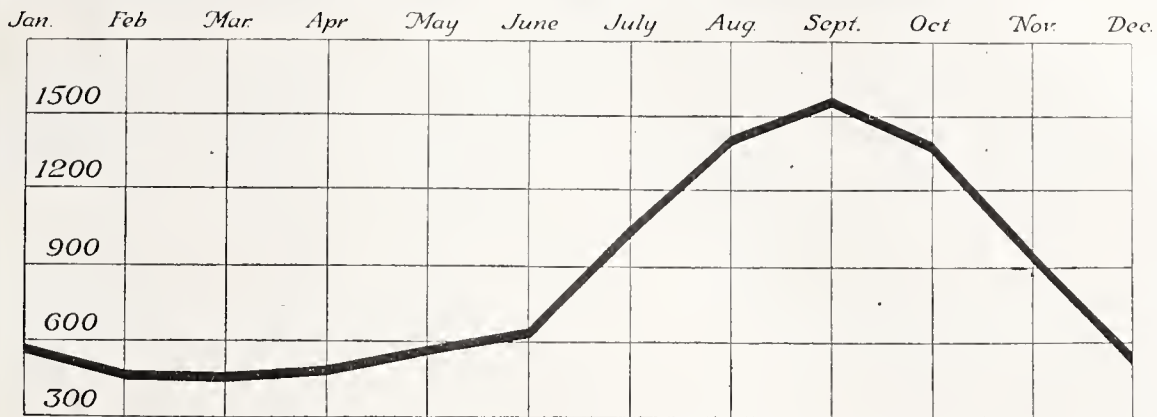
The second edition of Dr. Pottenger's work, following so closely upon the first, "indicates an awakening interest in that phase of medicine which makes the patient himself the chief ob-

ject of study." In the second edition no new chapters but much new material has been added.

In this monograph the author has attempted to interpret the symptoms which are found in everyday clinical observation of visceral diseases in terms of visceral neurology. He emphasizes the importance of the "viscero-trophic" reflexes—the subject of an earlier monograph by the same author. He discusses the intermingled activities of the endocrine glands and the vegetative nervous system. The book is divided into three parts; the first two, deal with the application of the neurology to clinical medicine, and the third section is a brief review of the physiological anatomy of the vegetative nervous system.

This book contains much useful information; although in some instances it is extremely difficult to see the authors point of view in the correlation of certain clinical observations with the physiological evidence; however, we must welcome enthusiastically all efforts to restore clinical medicine to the van of research.

S. P. B.



Typical Yearly Curve for Deaths From Typhoid Fever in the United States

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CERTAIN GROUPS OF ATYPICAL ABDOMINAL SYMPTOMS WITH RELATION TO ESSENTIAL PATHOLOGY

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ALL of us, surgeons as well as physicians, have for the last fifteen or twenty years, been confronted with a group of patients, suffering with symptoms of abdominal disease, for whom our therapeutic efforts have been characterized by a high degree of empiricism and nascent hopefulness about the result.

How often in the memory of all of us has the preoperative diagnosis been "Gastric Ulcer," "Gall Stones," "Cholecystitis," "Chronic Appendicitis," "Floating Right Kidney," "Cystic Right Ovary," and the finding at operation failed to reveal an ulcer of the stomach or duodenum or stones in the gall bladder or evidence of a chronic inflammation thereof, or chronic appendicitis; and how well do we realize that in these cases, that gastro-jejunostomy, cholecystostomy or cholecystectomy, appendectomy, oophorectomy or nephropexy fail to relieve these patients of those symptoms for which he or she sought relief. How well have we, in the light of experience, come to realize that the last state of these patients is worse than the first; for in addition to the original complaint, there is superadded to their burden the morbidity incident to empir-

ical surgery. The conscientious surgeon is embarrassed and our art is brought into disrepute.

It has been subconsciously realized that the problem of the etiology of the complaint of these patients has not been solved; that the treatment evolved has not been based upon that knowledge and that an erratic distribution of failures and successes is an inevitable consequence of such empiricism.

We believe that the answer to this problem is to be found in an Abnormal Mobility of the Ascending Colon. It is not the intention of this paper to discuss the embryology, normal and abnormal, the physiology and pathology of the colon, in this group of patients. Suffice to say, that the matter may be gotten clearly before you, that by a *mobile ascending colon* we mean that segment of the large gut from the cecum to the hepatic flexure; which, because of defective and abnormal development, is a pendulous tube attached by a mesentery and not a fixed viscus; that as a result of this pendulous, mobile organ with its mesentery, it is mechanically inefficient and cannot perform its work of driving semi-solid material vertically against the force of gravity; that as the result of this inefficiency, stagnation and overloading occur, demonstrable lines of strain develop, which produce characteristic morbidity manifested by char-

acteristic symptoms and signs which group themselves into certain classes or types, according to the character and localization of the pain, as Gastric, Duodenal, Biliary, Renal and Right Iliac Fossa Types. But they manifest clinical signs and symptoms which are common to all of them at first, and subsequently become obscured by the appearance of the *type pain* which in the estimation of the patient relegates his other symptoms to the background. The onset is generally dated by the patients from the age of twenty or thereabouts and described by them as indigestion—a feeling of fullness after meals, discomfort, flatulence and some lethargy. The average duration of these symptoms is about 6 months and then pain in one or the other region of the abdomen appears for the first time.

Particular emphasis must be laid upon one aspect of pain in these cases: *Although it is constant in type and constant in location for the individual case it is characteristically erratic and irregular in its time of appearance*, both with reference to the number of days on which it may be present, followed by lucid intervals of entirely irregular duration, and to its appearance, disappearance and reappearance sometimes in the course of the same day. *This erratic chronology of the pain* is so essential a feature of these cases that it assumes the position of a sign of much diagnostic importance.

Now the load of the mobile ascending colon and consequently the strain that it exerts, are most certainly variable. Herein lies the explanation of what is such a marked feature of these cases, namely, *the constant inconstancy of the pain*.

Loss of weight is a noticeable feature. Lassitude is marked. Constipation, most obstinate, is characteristic of all of them but develops as a rule after the onset of symptoms from one to four years. It is the result of the final breaking down of the colon in performing its natural function under mechanical conditions badly suited to it and cannot be regarded as the cause of symptoms antecedent to it.

On examination of the abdomen the fullness of the cecum and ascending colon is easily ascertainable and in about 80 per cent of all cases the right kidney shows variation of po-

sition between a gross prolapse and slightly increased mobility and palpability. *This is a clinical sign that is of more importance in considering the diagnosis of disorders of the alimentary tract than the urinary tract, when taken in conjunction with the observation that although a mobile kidney is present in so large a proportion of these cases, no symptoms are presented that can possibly be attributed to it.*

X-ray examination.—Radiographic records of barium meals show an obvious *malposition* of the ascending colon as judged by the position of the *hepatic flexure* in all cases. As a rule this is as low as the level of the hinder margin of the iliac crest in the upright position. The *range of excursion* of the ascending colon is estimated by comparison of plates taken in the upright position at the end of inspiration and in the lying down position, head lowered to an angle of 25 or 30 degrees, at the end of the expiration. The low level of the greater curvature of the stomach is easily seen as also the *steep ascent* of the left half of the transverse colon to the fixed splenic flexure.

TYPES

Gastric Type.—Pain in the epigastric region, coming on from within ten minutes to forty-five minutes after a meal. But it does not come on after every meal, and it does not necessarily appear every day. Sometimes it may come before a meal, and though as a rule food makes it worse, it sometimes makes it better. Localized tenderness can often be detected by the patient over the point of maximum intensity. Thus the location and character of the pain are constant for each patient of this type, but the time and seasons of its appearance are variable. It does not necessarily appear after every meal in any given day, nor does it appear every day in an unbroken sequence. Sometimes there may be an interval of a few weeks, sometimes a few days between attacks of pain. The pain is unaffected by the quality of food taken. Many of these patients have tried all forms of diet without relief and finally have found that they are no worse when they eat what they like. What a contrast to the story told by the patient with a gastric ulcer! When an ulcer is present, pain is constant in its times of

appearance; it always comes on after food, it is always made worse by food, and there are no lucid intervals. But when a pain is caused by a strain, that is variable in its intensity, then it will only make its appearance when the strain is effective up to the point of producing pain, that effectiveness being determined by the load which the dropped colon is carrying.

This constant response to a stimulus is a characteristic of ulcers generally in other parts of the body, and the gastric ulcer appears to be no exception.

Nausea is frequently present, but actual vomiting, appears to be of very rare occurrence.

The differentiation, by means of the histories, between the pain from the strain on the stomach of a mobile colon and from a gastric ulcer seems to be very clear.

Duodenal Type.—Pain is experienced in the right hypochondrium and is characteristically "a hunger pain" that appears about 3 hours after taking food and is relieved by the further taking of food. But once again, whilst its character and location are constant, its times of appearance and response to the taking of food are constantly inconstant. It is not necessarily a daily experience, nor if it appears before one meal in the day does it always recur before each subsequent meal. As a rule pain is relieved by the taking of food, but sometimes it is made worse. When the strain of the mobile ascending colon falls with maximum intensity upon the second part of the duodenum, the site that is most liable to ulceration—taking of food can clearly have one of two effects upon the load in the ascending colon. Either the wave of peristalsis initiated by the next meal shifts the load into the transverse colon and so relieves the strain upon the duodenum or the meal merely silts up in the ascending colon, and adds to its load, thus failing to relieve, or even intensifying the pain. As a rule the former happens, and so the phenomena of a "hunger pain"—that is a pain relieved by food—is established.

The time of appearance of a "hunger pain" coincides as a rule with a time when most of the previous meal will have arrived at the

ascending colon—that is within about three to four hours after feeding. Hence the "hunger pain" is really a "food pain" determined by the arrival of food at a portion of the alimentary tract, where it can exert a noxious strain, exhibiting a variability that would be expected from a variable strain and responding in an erratic manner to a method of relief, that is not strictly controlled, for augmenting or diminishing the strain. So the *constant inconstancy* of "hunger pain" speaks for a mobile colon and its morbid effects rather than ulcer which is characterized by constant constancy.

Biliary Type.—The crisis is sometimes very severe, onset sudden, and intense pain is experienced in the region of the gall bladder, leading to nausea and vomiting. The upper segment of the right rectus is rigid. The attacks may last from twelve to thirty-six hours and are non febrile.

Renal Type.—We have not met with this type, but Waugh reports five cases in whom in addition to their general symptoms of indigestion these patients experience reveal crises of great severity. He says "they are so severe as to produce collapse and vomiting, whilst the right kidney was swollen and tender." He is of the opinion that a partial occlusion of the renal vein is brought about by the drag of the colon during the attack; and it is of interest to note that the attack could be cut short by the administration of a flatus enema, accompanied by a hypodermic injection of pituitrin. The usual examination for renal or ureteral stone was made with negative results and at subsequent laparotomy nothing abnormal was detected with the kidney or ureter except the usual floating kidney and the patients were relieved by the fixation of the mobile colon.

Right Iliac Fossa Type.—In these cases chronic pain in the right iliac fossa is the salient feature, added to the usual dyspeptic symptoms. It is not focal, and has not the severity of the type pains. It is often described as a severe discomfort experienced diffusely over the right iliac fossa, remaining for several days. It appears to be a sensation experienced from a chronically over-distended segment of gut to which an element of dragging is added.

RECORD OF THIRTEEN OPERATIONS FOR MOBILE ASCENDING COLON:

No.	Case	Sex	Age	Type	Duration of Previous Illness and Treatment	Operation	Results
1	M.M.	F	43	Biliary	3 years Rest cure—Diet-Cholecystectomy advised.	Appendectomy normal Colopecty, July, 1920.	Nov. 1921, Reported perfectly well—gained 20 lbs. weight. Leading an active life. "Operation a perfect success."
2	E.G.	F	37	Gastric	17 years- Gastric lavage-Clipping rectal valves-suspension of uterus. Colectomy urged. Rest cure. Diet. Drugs.	Colopecty Appendectomy (prophylactic) Sept. 1920	Says: "The operation has not benefited me in the least. "However she leads an active life, her digestion is better and the abdominal complaint has ceased to be her chief one. A profound neurasthenic. Sept. 1921.
3	T.T.	F	36	Gastric	15 years. Cholecystostomy. Appendectomy and uterine suspension.	Colopecty, October, 1920.	Gained 15 lbs. weight. Digestion much improved. Not heard from since 3 months after operation.
4	C.K.	F	38	Gall Bladder	5 years. Sippy's Treatment. Rest cure. Change of climate Drugs. Hydro-therapy-Appendectomy and Cholecystostomy.	Colopecty, April, 1921.	Much improved. Abdominal complaint relieved. Headaches much less frequent, September, 1921.
5	S.B.	F	27	Gastric	5-6 years. All types of treatment without relief.	Colopecty, Appendectomy (prophylactic) April, 1920.	"Greatly relieved. Digestion good." August, 1921.
6	R.P.	F	39	Rt. Iliac Fossa.	10 years. Appendectomy Resection of right ovary	Colopecty, May, 1921	"Considers the operation a great success. Entirely relieved." Nov. 1921.
7	C.B.	F	17	Rt. Iliac Fossa	6 mos.-Diagnosed as chronic appendicitis and appendectomy advised.	Colopecty, Appendectomy (prophylactic) August, 1921.	Entirely relieved. Gain of 12 lbs. in weight. November 1921.
8	N.H.	F	24	Gastric	4-5 years. Diagnosed Gastric ulcer-operation advised.	Colopecty, Appendectomy (prophylactic) June, 1921.	August, 1921 reported entire relief of abdominal symptoms-Note: Died suddenly Aug. 1921-Post mortem revealed tumor of brain, location not stated.
9	G.H.	M	31	Rt. Iliac Fossa	3 years-No previous treatment.	Colopecty, Appendectomy (prophylactic) September, 1921.	Relieved November 5, 1921.
10	E.W.	M	26	Rt. Iliac Fossa	7 months. Appendectomy, April, 1921.	Colopecty, October, 1921.	Entirely relieved.
11	E.D.	F	21	Gall Bladder	Attacks for 3 years intermittent char. by pain, nausea vomiting. Pain referred to right shoulder. Menorrhagia and metrorrhagia 3 yrs. Secondary anaemia D. and C. May, 1920.	Appendectomy (prophylactic) colopecty Nov. 26, 1921. Findings: Mobile As. Colon-Uterine. fibroid small. All other organs neg.	May 1st—complete relief.
12	M.	F	--	Duodenal	5 years Dietary.	Gastro-jejunoscopy for duodenal ulcer-Appendectomy prophylactic-Salpingectomy (left) hydrosalpinx Colopecty.	4-1-22, Gained 7 lbs. feels fine. Digestion good.
13	C.	F	----	Rt. Iliac Fossa	Appendectomy and Resection right ovary, no relief.	Colopecty.	Not heard from.

Of these 13 cases presented, seven more than 50 per cent had been subjected to abdominal section with no relief.

Five had had appendectomy—no relief.

Two had had cholecystostomy—no relief.

Two others who escaped had been urged to have cholecystectomy.

Two had had uterine suspension—no relief.

Two had had resection of right ovary—no relief.

One had been urged to have colectomy.

The above cases were subjected to the following type of colopexy—A right rectus incision 5 inches long, the umbilicus being opposite its mid point. The abdominal and pelvic contents are carefully palpated and inspected, so that a view of most of the stomach, the duodenum, the biliary apparatus, the ilium and appendix, the ovaries and tubes and finally the colon itself is obtained. *The findings of this exploration are correlated with the symptoms of which the patient complains.*

The ascending colon, from cecum to hepatic flexure, is then lifted out on to the towels, and at this stage the main lines of strain upon the stomach, duodenum and gall bladder can be demonstrated easily by gentle tugs on the hepatic flexure. The mobility of the second portion of the duodenum is tested by lifting it up between the finger and thumb, when more particularly in cases of hunger pains, it can be brought up to the level of the incision in the skin. The appendix is removed if present, bands between the gall bladder and colon divided.

The peritoneum, and fascia are then incised just above the brim of the pelvis on the right side, and the incision is carried upwards parallel to the line of the colon and as close as possible to the root of the mesentery. The upper limit of the incision corresponds approximately to the level where the colon crosses the duodenum. Here the fascia be-

comes much thinned, where it splits to enclose the right kidney.

This curtain of peritoneum and fascia is then pulled outwards, and the bed formed by the iliopsoas and quadratus lumborum muscles freed of fat and cellular tissue until the muscle fibres and nerves of the lumbar plexus are seen.

Into this bed the colon is then gently coaxed, the cecum being placed into position first of all. The curtain is pulled over it, and attached by interrupted stitches of catgut to the anterior longitudinal white band of the colon. This is a convenient land mark, which insures the gut being held in proper position without torsion upon its own axis. The abdomen is then closed in the usual way. The after treatment is that in common use after all laparotomies with the exception of the elevation of the foot of the bed to an angle of about twenty or twenty-five degrees, thus tending to make the patient more comfortable by taking the drag off of the colon.

CONCLUSION

I realize that so small a group of cases does not justify one in drawing definite conclusions, however the following express my belief at the present time:

1st—That this condition does exist as a congenital defect.

2nd—That this condition is a pathological entity, producing a characteristic morbidity and should be given due consideration as a possible etiological factor in all cases with chronic abdominal symptoms.

3rd—That the condition can be diagnosed with ease and certainty in every case examined.

4th—That colopexy is an operation essentially physiological and constructive in type, and will relieve the morbidity. Certainly the patient is nearer the normal type after its performance than he or she ever was before.

SOME FACTORS INFLUENCING THE ETIOLOGY OF GLYCOSURIA.*

O. N. BRYAN, M.D., NASHVILLE.

JOSLIN says that diabetes is a disease in which the normal utilization of carbohydrate is impaired, in consequence of which glucose is excreted in the urine. His rule is to consider any patient to have diabetes and so treat until the contrary is proven, who has sugar in the urine by any of the common tests. This method of procedure is safer for the patient than to make use of the term glycosuria, which begets indifference. There is some difference in cases of diabetes and glycosuria and I shall attempt to point out some of these differences.

Physiological glycosuria is a term one finds and is to convey the idea of the normal amount of sugar in the urine. The normal amount in urine according to Myers is between .08 and 0.2 per cent while Benedict claims that according to his later technic he can detect glucose in as low concentration as 0.01 to 0.02 per cent. According to this, one is confronted with the question: when is urine normal and when pathologic. Blood sugar determinations will throw some light on this subject.

Alimentary glycosuria.—Sugar may appear in the urine after a meal rich in carbohydrates. If the carbohydrates are in the form of starch it would signify diabetes mellitus, but if the carbohydrates are in the form of sugar it might or might not signify diabetes. To determine this point Naunyn suggests the administration of 100 grams of dextrose two hours after breakfast of a large cup of coffee and milk and 80 to 100 grams of bread. If sugar is then demonstrable in the urine in a quantitatively estimable amount, diabetes mellitus exists.

The drug glycosurias and those of traumatic and emotional origin are almost invariably of a temporary nature.

The distinction between glycosuria and diabetes is discussed by Allen whereby he pro-

poses two laws by which glycosuria can be distinguished from diabetes. The first law: "Allen's Paradoxical Law"—"Whereas in normal individuals the more sugar is given the more is utilized, the reverse is true in diabetes."

Many investigators have shown that all common sugars are antidiuretic and diminish the output of urine. In diabetes dextrose acts as a diuretic when it is given intravenously, orally, subcutaneously, or otherwise, and this is Allen's second differential test.

This is one disease which has shown a steady increase in the mortality rate and except for the disease of the arteries, diabetes has increased more rapidly as a cause of death in the registration area of the United States in the first decade of this century than cancer, cerebral hemorrhage and apoplexy, organic diseases of the heart, cirrhosis of the liver or Bright's disease. The mortality from this disease in the registration area of the United States has increased statistically between 1900 and 1915 by 80 per cent, whereas there has been a decrease of 24 per cent in deaths from all causes. During the last thirty-five years the general death rate of New York City has been cut in half, but the death rate from diabetes has increased statistically sixfold. Statistics from all parts of the world will show this enormous increase in the death rate from diabetes.

Since approximately one death in 75 is due to diabetes one might assume that 1.3 per cent of the living population would have the disease and by this method of reckoning there are over 1,000,000 potential diabetics in the country. We have carried on campaigns against tuberculosis and cancer as well as the infectious fevers but it is high time that something was being done in a preventive way to check this mortality rate from diabetes. It will have to be done in an educational way to both physician and laymen along the line of diet and physical exercise.

*Read before the Middle Tennessee Medical Association at Franklin, May 11-12, 1922.

The etiology of diabetes is recognized as some fundamental disturbance in metabolism presumably associated with the pancreas. Joslin discusses the predisposing factors in the etiology of diabetes under the following headings: 1, obesity, 2, dietary excesses, 3, multiple etiology, 4, heredity, 5, strenuous life, 6, nervous element, 7, infections, 8, arteriosclerosis, 9, syphilis, 10, trauma, 11, pancreas, 12, hypophysis, 13, liver, 14, renal glycosuria, 15, gout.

Obesity.—Joslin after an analysis of 1000 consecutive cases of diabetes says that he believes diabetes is largely a penalty of obesity and the greater the obesity the more likely is Nature to enforce the penalty. This presents the subject of too much food and too little exercise; the daily life of too many of our people of today. He formulates the following diabetic law: "It is rare for diabetes to develop in an individual, above the age of twenty years, who is habitually underweight, and when it does develop the case will usually be found to be either extremely severe, extremely mild, or associated with a marked hereditary taint or degenerative stigmas. Fat children have been noted as being prone to develop diabetes in later life. About one-half of the carbohydrate of the body is stored in the muscles and a large part of the sugar of the body is burned in them, therefore it is not so strange that fat people should be prone to develop diabetes. The following epigrams may be true in this case. "Laugh and grow fat—grow thin and laugh longer"; and also "What is added to the waist line is cut from the life line." It has been shown that one's chance for life is increased after the age of thirty-five by being 15 to 20 pounds underweight, and that obesity carries with it an invitation to death.

Dietary exercises.—It is thought to be the excess of food eaten that plays a part in the production of glycosuria rather than an excess of carbohydrates. The Japanese live upon a diet largely of rice and barley and yet so far as statistics go, the disease is not only rare but mild in that country. During the recent war Kolisch believes that under-nourishment was the important factor in the lessened mortality from diabetes. The food restrictions reduced the average individual's ration to a

minimum but Funk thinks this was due to absence of individual food excesses rather than individual under-nourishment.

It has been shown in partially depancrea-tized animals that diabetes may be initiated or aggravated by over-feeding with foods other than carbohydrates. In human beings the development and downward progress of diabetes, result when a deficient pancreatic function is coupled with an excessive diet of any sort. Allen found that in the early stage glucose is more powerful than starch in producing diabetes, and animals which are progressing toward complete recovery on a starch diet can be sent into hopeless diabetes by the admixture of glucose. A point in diet that deserves especial attention is the great increase in the consumption of sugar per capita. There has been a steady increase per capita for the past 100 years; 1800-1810 was 11 pounds per capita; 1850-1860, 26 pounds; 1890-1900, 56 pounds; 1910-1917, 73 pounds per capita.

Multiple causes may be found in each case to be playing a part if due search is made.

Heredity is thought to play a part in some cases. Naunyn said that the more carefully he inquired into the family history the more commonly he found heredity to be present.

Strenuous life plays a part and this in some manner may explain the frequency of this trouble in physicians. If this plays a great part then the present day strain of work can only be conducive to an increase in diabetes.

Nervous element plays a part in the cases that have been through some emotional strain. Allen's conception of the functional nature of diabetes shows how the disease may be brought about through the nervous system by its action on the pancreas.

Infections including syphilis seem to play a minor part if any in the production of glycosuria.

Trauma seems to play a part and especially in cases of fracture of an extremity it is often accompanied by glycosuria. So are fractures at the base of the skull.

The frequency of diabetes in the Jewish people is thought to be due to the overfeeding (producing obesity) which begins in childhood and lasts to old age.

Pancreas.—Disturbance in the physiologi-

cal action of the pancreas or disease of the gland is a basal etiological factor which all recognize to exist in diabetes. Sclerosis from any cause, syphilis and cancerous growths are some of the commoner conditions found in the pancreas of diabetics. Cushing calls attention to the relation of the hypophysis and its diseased conditions to the production of glycosuria and diabetes. Diseases of the liver have frequently been pointed out as having some relation to the production of glycosuria. I recently attended an old lady that died of cirrhosis of the liver with a persistent diabetes and on post-mortem the liver was demonstrated as cirrhotic while the pancreas was normal macroscopically and microscopically.

Renal Glycosuria.—Glycosuria with normal glycemia relatively independent of diet. The excretion of sugar must be due to abnormal permeability of the kidney, while the tissues still retain the normal power of utilizing dextrose. One should always be guarded about making a diagnosis of renal glycosuria until the patient has been under observation for several years.

Gout is mentioned as having some etiological relation to glycosuria, however, it is doubtful. Pratt in an analysis of 30 cases of gout says that sugar was not present in a single instance of his cases.

In the discussion of the sugar control in the body no phase has been given more attention than that of the relationship existing between the percentage of blood sugar and urine sugar and the factor which the so-called "renal permeability" "renal threshold" or "renal leak point" plays. Normally the kidney is not permeable to blood sugar values of from 0.07 per cent to 0.15 per cent; the threshold may be considerably altered one way or the other in certain abnormal conditions. Nephritis for example may result in hyperglycaemia without glycosuria due to the higher threshold. The following tabulation given by Funk may clarify our conception of the relationship:

1. *Normal glycaemia* (normal blood sugar content).
 - a. Without glycosuria.
 - b. With glycosuria.
2. *Hyperglycaemia* (abnormally high blood sugar content).

- a. Without glycosuria.

- b. With glycosuria.

3. *Hypoglycaemia* (abnormally low blood sugar content).

- a. Without glycosuria.

- b. With glycosuria.

Normal blood sugar (1a). It is generally stated that normal blood sugar values vary from 0.07 per cent to 0.15 per cent, depending upon the diet. It is well to recall that Hamman and Hirschman pointed out in 1917 that in normal persons, after giving 100 grams of glucose, that the blood sugar curve reaches its height in about one-half hour and the base line is one or two hours. The blood sugar was always below 0.15 per cent. In diabetes the highest figures were obtained in from one to two hours when the fasting level was not reached until three or four hours had elapsed. The blood sugar level was always above 0.2 per cent after taking glucose. The best time to make blood sugar determinations is when the maximum concentration occurs, that is one-half to two hours after breakfast. If the fasting value is desired, the blood should be taken before breakfast. Williams and Humphreys found the range of blood sugar practically normal in 60 miscellaneous diseases, chiefly gastro-intestinal and pernicious anemia, and excluding diabetes, and nephritis and infections, was from 0.07 to 0.16 per cent, with an average of 0.115 per cent. In a series of 9 cases of carcinoma there was a moderate elevation of blood sugar 0.12 to 0.16 per cent. The question may be asked whether it is possible to have glycosuria with a normal blood sugar content. (1b) It is experimentally possible, as demonstrated by the injection in animals of phloridzin, which for want of better explanation is said to impair the renal function and increase its permeability for sugar. The lowering of the threshold produces glycosuria. Under this classification come the cases of renal glycosuria.

Hyperglycaemia without glycosuria (2a). That we may have an increase over normal values as given to blood sugar content without its appearance in the urine is typically illustrated in those instances associated with nephritis. Here the renal threshold is increased. Williams and Humphreys state that in the early stages of nephritis, when the

general metabolism of the body is but little disturbed, blood sugars, as a rule, are normal. In the last stages of nephritis, when the patient is in uraemia, the blood sugar will be found very high, often equaling the severe stages of diabetes. Other important metabolic constituents of the blood will be found correspondingly increased, presenting a picture of complete metabolic failure. A third group of cardio-vascular cases, characterized by high blood-pressure and little or no evidence of renal disturbance, usually exhibits blood sugar levels slightly higher than normal. In severe cases of nephritis, patients may excrete small quantities of sugar in the urine, frequently giving rise to the misapprehension that true diabetes exists. In such cases the blood sugar level is not appreciably influenced by carbohydrate restriction, and these patients should not be subjected to the discomfort of a rigorous diabetic diet. McCay states that kidney disease may not present glycosuria even when very marked hyperglycaemia is present. Failure in nitrogen metabolism precedes, often by months, the rise in blood sugar, so that the latter has a rather serious prognostic omen.

Hyperglycemia with glycosuria (2b) is the condition one finds in typical diabetes. Williams and Humphrey studied the blood sugar level in 127 cases of diabetes, of which 71 were females and 56 males. They found no constant level for the appearance of sugar, and that there was no striking relation between the height of the renal threshold and the duration of the diabetes. It would appear, according to these observers, that the threshold tends to rise with the increasing duration of the disease. Younger diabetics, as a rule, have low or normal thresholds. The threshold rises with advancing years. When the diabetes is mild or quiescent, the point at which the kidneys eliminate sugar is stationary; but when the disease become progressive, the threshold tends to rise. Before death the blood sugar renal threshold may reach great heights with little or no sugar appearing in the urine. A rising renal threshold for sugar in the face of careful dietary treatment is a serious prognostic sign. A high renal threshold for sugar in mild diabetes under proper dietary regulations usually indicates some complication, such as arterial hypertension.

A high renal threshold for sugar may mean a physiological expedient to conserve food material. The authors believe that persistent high blood sugar levels promote exhaustion and rapid decline of function, and the high threshold is merely a safety measure. In severe diabetes, when extremely low diets are necessary to maintain life, the high threshold is essential to take care of the seriously impaired carbohydrate metabolism. In the treatment of diabetes it is desirable to maintain the blood sugar level as nearly normal as possible, even though severe restrictions in diet may be necessary for this purpose, notwithstanding the fact that the high threshold will permit of a much more liberal diet without the appearance of sugar in the urine. Williams and Humphreys believe diabetes should be controlled on the basis of the blood sugar level rather than by urine tests. A persistent low blood sugar level may be regarded as an extremely favorable sign. A persistent high blood sugar level, in spite of under-nutrition, usually points to an unfavorable outcome. In their experience, cases which hitherto had been intractable and had shown progressive loss of food tolerance, when the blood sugar level was disregarded, have been greatly benefited and their tolerance increased by regulating the food intake so as to insure, when possible, a normal blood sugar level. While they regard 0.15 per cent as the maximum normal digestion blood sugar level, they believe patients are safer when this level is not higher than 0.13 per cent. Bailey studied the rise and fall in the blood sugar following the ingestion of glucose (alimentary hyperglycemia) and he found a rapid rise and fall to normal within an hour in renal glycosuria and early diabetes; and a prolonged increase in blood sugar value to two and three hours before falling in diabetes of long standing, nephritis, myxedema and hypopituitarism. The blood volume increases with the development of the hyperglycemia, returning to normal with the blood sugar. Blood sugar is equally divided between plasma and corpuscles and both increase in proportion. The excretion of sugar is uninfluenced by the rate of urinary excretion except in some cases of parenchymatous nephritis. Hypoglycemia with glycosuria.—Persistent slight glycosuria in which small

quantities of sugar are continually present in the urine, in which variations of diet have little or no effect on the output of glucose and

in some of which the quantity of sugar in the blood has been shown to be rather diminished than increased.

PERITONEAL DRAINAGE.

R. A. BARR, M.D., F.A.C.S., NASHVILLE

DRAINS placed into the peritoneal cavity after abdominal or pelvic operations usually prolong convalescence. They encourage wound infection and post operative hernia especially if they are placed in or lead under the wound of operation. They produce peritoneal adhesions and thereby cause an increased tendency to mechanical obstruction of the bowel. They are more or less painful to the patient. They are unpleasant to all concerned. Their use should of course be limited by the necessity for them, and not by the doubts and fears of the surgeon. Yet how often do we hear the slogan—"When in doubt, drain." This rule of conduct has been handed down since we first began timidly to leave out drainage in abdominal cases, and it so readily fits into any situation, and relieves us of so much mental effort and nerve strain that we have long since lost sight of the fact that it is mere soothing syrup to our surgical conscience, and neither is nor ever has been a guide to the indications for drainage. It is perfectly correct and proper to drain when in doubt but the question facing the operator is to determine when he is justified in having the doubt that makes the use of drainage advisable.

It is reasonable to suppose that Joseph Price and John B. Murphy, while they were men of original thought and strong convictions, did not themselves believe that they had settled for all time all matters pertaining to surgery of the abdomen and pelvis.

Price packed the pelvis full of gauze after operations for pelvic infections, and Murphy used tube drainage to the bottom of the pelvic cavity combined with Fowler's position after all operations done on patients with perfora-

tive peritonitis. These two men of the leaders of the recent times made most impression upon American surgeons, and particularly upon those in the South. They taught us the surgery of the acute conditions which have made and still make up the bulk of our work. They were such impressive personalities and such wonderful teachers that many of us will die before we are cured of the errors which (since they were not infallible) necessarily were a part of the instruction they gave us. Since they are not here to make the necessary corrections some of us will continue to pack the pelvis and to give the Murphy drip (which by the way Murphy denied the parentage of) to be "excreted" by the peritoneum and gently float all impurities to the drainage tube placed for the purpose of withdrawing them.

The relief of abdominal pus tension by incision and intubation was very thoroughly taught by Murphy, and it is so reasonable in theory and its apparent benefits so easy to visualize, that years of observation failed to convince even as great a man as he undoubtedly was of its futility; so it is probably useless to attempt the task of shaking the average drainage advocate's confidence by argument. It will do no harm, however, to present any fact that apparently shows another side to the subject.

I believe very strongly myself that abdominal drains have only a local value and my practice has been based upon this belief, and the results have been such as to strengthen my belief.

I further believe that drainage is unnecessary in more than half of the cases in which it is used for local effort. Timidity and a

lack of appreciation of the recuperative powers of the peritoneum produce the doubt that inevitably leads to the drain. As my own courage has grown I have dispensed even with local drains with increasing frequency, and with uniform satisfaction in results.

It is a matter of common observation that the peritoneum can take care of an infection that is beyond the natural resistance of the tissues of the belly wall which are exposed during operation. In this connection I may say that I never place drains for the purpose of anticipating infection of a wound of operation. I watch the wound and promptly evacuate any collection of serum, blood or pus.

Since intra-peritoneal drains are at times necessary for local affect it may be well to note the indications for them as well as their character and location.

Drains are indicated—

(1) In perforation that cannot be closed or where there is a prospective perforation. This includes all insecure suture lines where if possible the drain should not go to but merely to the neighborhood of the suture. I include the stump of the gall bladder as properly belonging to this class of cases.

(2) When necrotic tissue is present that cannot be removed at operation.

(3) Abscesses with stiff walls, definite limiting adhesions and a thick deposit of fibrin. There is room for much difference of opinion as to when drainage is indicated in abscess cases with less pathology than this. Give the collapsible abscess cavity a chance without drainage.

(4) To anticipate the certain localization of an infection with abscess formation during the subsidence of a generalized process. In my own work I have found that I cannot be certain of localization and have stopped trying to outguess the peritoneum and no longer use the anticipatory drain.

The use of drainage where the retroperitoneal cellular tissue has been involved before, or opened during an operation, in the presence of an infection, is not a matter of intraperitoneal drainage except incidentally when the drain may have to cross peritonized areas.

When drainage is needed it is certainly mainly for the relief or prevention of tension. The majority of surgeons who use

drains still add gauze in some form for the advantage of capillarity in getting rid of serous exudates. Most admit its uselessness and even its actual disadvantage for pus. The dispersion or absorption from hydrostatic pressure of serum standing in a drainage tube could hardly have any deleterious effect comparable to that which might result from blocking pus drainage with a gauze wick. Further the removal of gauze is painful to whatever extent it comes in contact with tissues. For these reasons its use in connection with drains placed in the peritoneal cavity should be limited to the control of cozing and possibly stimulation of adhesions in obtaining sequestration of an infected area; in other words it is gauze packing and not gauze drainage.

The cigarette drain has had an amazing popularity, due apparently to the general fondness for that form of smoke after which it is named. This and the spirally split tube with gauze inlay are less frequently seen than a few years since but they still get honorable mention in high class publications. The lumen of a tube used for drainage should be free. It should not be plugged with gauze and its course should be so direct as to avoid obstructing kinks or bends. To make removal easy gauze packing should be covered with rubber to such extent as is possible without interfering with its function. However, this use of gauze and rubber does not constitute a cigarette drain in the sense that that term is ordinarily used.

The point of exit of a drain is a matter of some, though possibly minor, importance. It should preferably be through special short incision (stab) and the parietal opening should be, theoretically at least, at the available point nearest to the area to be drained. In the abdomen and probably elsewhere the direction of drainage, up or down hill, is conceivably negligible. Postural drainage of the abdomen does not appeal to me, and probably to no one who does not believe in the possibility of drainage of the general peritoneum. Fowler's position is only justified by the possibility of draining the peritoneal cavity through a tube in the pelvis. Only the thoughtless use it in the absence of drainage.

The ideal drainage opening in the belly

wall would be round and would stand open as if made with a leather punch. Where the drainage tube by pressure necrosis has made an opening something after this style it has served its principal purpose and can usually be removed. The tube need not be gradually shortened, and it does not have to be replaced by a smaller tube. The repacking of drainage openings with gauze and the gradual shortening, or graduated replacement, of drainage tubes seem very useless performances to me. I remove drains in 3 or 4 days and leave them out. The placing of tubes for the use of Dakin's Solution (Rulison, S. G. O., Vol. 30, page 294) is of course a different matter. The man who repacks cavities with gauze or who allows superficial dressings to adhere to raw surfaces belongs to the cave man age of surgery.

In hunting a basis of classification for the cases reported I have kept in mind the difficulty of obtaining anything like uniformity of judgment as to the pathology encountered which impairs the value of any comparison of statistics and the value of any statistical report. Practically is this true with regard to the seriousness and extent of a complicating peritonitis in abdominal work. In fact the extent and the seriousness (which is based on the bacteriology) of a peritonitis is impossible of proof especially when the generalization is extensive. For this reason all reference to peritoneal complications and to bacteriology will be omitted in the summary of case reports which I shall give.

Just two pathological conditions will be considered—pelvic infections and appendicitis.

The patients included in this report were all white and were operated on at one hospital.

The pelvic infections were consecutive operations and all had long histories of pelvic trouble. Many of them had been hospitalized and gotten ready for operation more than once before they could convince themselves of the inevitableness of the recurrence of a cute symptoms and of the necessity for operation. They were all interval cases in a way, that is they had local treatment until

the acute exacerbation subsided, though a few came to operation with a persistent slight rise of temperature. Most of them were tubo-ovarian abscess cases, and all had very definite masses to be felt on bimannual examination. No other surgery of any kind was done for pelvic infection of genital origin in the period covered by these cases. There were no cul-de-sac sections and no operations confined to the tubes and ovaries. This may sound radical, but there is a difference between radical in the *surgical* treatment of pelvic infections, and in being radical in the treatment of them.

The appendix cases were consecutive appendix admissions to the hospital with the exception of all cases of drainage of supposed appendiceal abscess without removal of the appendix have been excluded, as well as all interval cases, all cases of chronic appendicitis, and all cases in which there was any question of the presence of a definite acute infection that could be recognized with the naked eye.

Both pelvic and appendix cases are all referred to me by physicians, and after many of them had been observed or treated for varying periods.

This statement of circumstances and of fact is made instead of going into detail as to pathology and complications since this latter would lead us from established fact into questions more or less of mere opinion.

The information as to hernia in the hysterectomies is positive, but in the appendix cases it is not based on follow up work. None of the later (appendix cases) had evidence of hernia at the time of leaving the hospital and with the exception noted none has been reported since.

The inferences that I have drawn from this experience, from observation and from the reported experience of others have already been given and need not be repeated.

Trust the peritoneum to take care of its own.

The usefulness of drains is shortlived. Retention of tubes beyond three or four days and repacking with gauze are procedures worthy of consideration only because of their age.

PELVIC INFECTIONS
PAN-HYSTERECTOMIES

CLOSED CASES

<i>Number</i>	<i>Average Hosp. Days</i>	<i>Wound Infections</i>	<i>Deaths</i>	<i>Postoperative Hernia</i>
25	20	3	None	None
		PACKED CASES		
1	39	1	None	None

SUBTOTAL HYSTERECTOMIES

CLOSED CASES

14	19	5	None	None
		PACKED CASES		
1	30	1	None	None

SUPRAVAGINAL AMPUTATIONS

CLOSED CASES

7	17½	1	None	None
		PACKED CASES		
1	16	1	None	None

HYSTERECTOMIES

Total				
49	20	12	None	None
Total Closed				
46	19 plus	9	None	None
Total Packed				
3	28 plus	3	None	None

APPENDECTOMIES

GANGRENOUS OR PERFORATIVE

CLOSED CASES

<i>Number</i>	<i>Average Hosp. Days</i>	<i>Wound Infections</i>	<i>Deaths</i>	<i>Hernia</i>
46	13½	16	None	None
		DRAINED CASES		
34	19	27	2 (6—%)	None

ACUTE INFECTION WITH NEITHER GANGRENE OR PERFORATION

CLOSED CASES

217	11¼	12	1 (Cer. Hem.)	1
		DRAINED CASES		
6	27	4	1 (Intest. Obst. 40th day)	None

APPENDECTOMIES

Total				
303	12 1-3	59	4 (1.3%)	1
Total Closed				
263	11 1-3	29	1 (Cer. Hem.)	1
Total Drained				
40	20 1-3	31	3 (7.5%)	None

THE PRELIMINARIES OF PROSTATECTOMY.

W. A. BRYAN, M.D., F.A.C.S., NASHVILLE

THE risks of prostatectomy have on account of various causes been exaggerated into a bugaboo that in many instances causes the patient to bear the insufferable ills he has; and the physician in charge of such cases to hesitate to recommend the operation until there is no longer a time of choice; until the patient and the physician both make up their minds that death is preferable to the present continued, hopeless suffering. This is not meant as a complaint against the conclusion reached by either the physician or the patient. For when one reads mortality records of these cases reaching as high as thirty to thirty-five per cent in large numbers of cases and other records even exceeding this enormity, it would seem to be sound judgment in any one who hesitated to advise or accept what may be called this fatal step.

There must be something wrong with the technic or preparatory or post operative treatment of any man whose mortality runs higher than ten per cent. or something wrong with his study of his cases prior to operation, or bad judgment in his discovery and elimination of the hopeless case before he operates. It is absurd to say that a given patient is going to die anyway and we may as well give him a chance by doing a prostatectomy. Such a patient can be relieved for the time, for an indefinite time, by doing much less than a prostatectomy, and one of the most salutary operations escape the blame for a death which it is supposed to cause, but which it did cause only by adding an overburden of insult to the injury the patient had already suffered at the time of operation.

There are fair, honest records of large series of cases of prostatectomy which run well under five per cent in mortality. These have been in the work of a number of men sufficiently large to demonstrate that it is due to something more than a personal, private trick. Some of these records are much under five per cent, thus bringing the mortality of

the operation closely within the range of hysterectomy and cholecystectomy, about which no unusual dread has been established.

The first and perhaps the most difficult, certainly the most fundamental, impression surgeon, physician and patient should get well established in their minds, is that prostatectomy is never an emergency operation, never a matter of urgency. There is, to my mind, no imaginable exception to this rule. In my practice, likewise, there is no exception to it. This may suggest that there are cases who have gone to the point of absolute retention and must have relief. Cystotomy or external urethrotomy, or the insertion of a catheter through a cannula above the symphysis are all minor procedures which can be quickly and safely executed under local anesthesia, and carry no risk from anesthesia, hemorrhage or shock. No, prostatectomy is not an emergency measure, never. More than this, it is not an operation that justifies the surgeon in admitting the patient to the hospital one day and operating on him the next day, while the family wait. It requires ample time for study of the case, and for preparation of the patient in the minutest possible detail. The prostate itself, if cancer be eliminated, is the smallest part of this study. It is not sufficient that we have done routine laboratory work; it must be repeated over and again until a safe condition is reached, or until we are convinced that hope of such a culmination is futile. If weeks are required in preparation and study they must be freely given, otherwise the operation should not be done.

What then are the preliminaries that should be followed as a routine in candidates for prostatectomy?

1.—General physical examination. These patients are, on the average, old. The examiner therefore should not only pay attention to the general condition, but should devote especial attention to those conditions incident to age, the premonitors of a demise

more or less near, and weigh them separately and jointly to determine, as an actuary would, the expectancy of the old man; if this is practically nil, what can we hope to gain by doing a major radical operation that cannot alter these features? The items I especially refer to here are the state of the arteries, the heart and the blood pressure. Softening of the brain, too, is sought for as an important sign of the harm that has been done by the arterial hardening. Of these, I consider the condition of the heart the least important, provided it is compensating and there is no evidence of myocarditis. If an attack of apoplexy has occurred or if prodromal symptoms or signs are marked, I would hesitate to operate. If cerebral softening is noticeable, it is wiser not to operate. I lost a case of this kind eight weeks after operation. He reached the state where he refused all food, and died of inanition.

Moots (Am. Jour. Obstet.) has laid down a rule concerning blood pressure in surgery and especially in surgery upon the old. The rule is that the pulse ratio is normal between forty and sixty per cent. It is usually safe to operate if the ratio is not less than twenty-five per cent nor more than seventy-five per cent. Less than the former and more than the latter is a signal of danger. If the ratio is between twenty-five and seventy-five per cent the case is probably operable; if it lies outside these limits it is probably inoperable. I would certainly feel a hesitancy about doing a prostatectomy on such a case. By pressure ratio is meant the ratio between the pulse pressure and the diastolic pressure. For instance, if the systolic pressure reads 120 mm. and the diastolic 80 mm., the pulse pressure is 40 mm. The pressure ratio therefore would be 40 divided by 80, or fifty per cent. The value of this rule in prognostication was shown in 1000 cases checked up by Moots. He found that in the cases operable by this rule 3.23 per cent died and 96.77 per cent recovered; while in the inoperable group (whose ratio was less than 25 per cent or more than 75 per cent) 23.07 per cent died and 76.93 per cent recovered. In other words the risk is eight times as great outside the limits as inside them.

2.—Examination of the genito-urinary apparatus must extend far beyond a casual observation of the presence of an enlarged prostate and the evidence to be obtained from such examination for or against malignancy or a purely benign hypertrophy. This is the simplest part of the work, but there is no class of work that more positively demands a diagnosis of the patient's whole condition rather than the immediate cause of his distress. What the surgeon should wish to know is whether this particular prostatic is a fit subject for prostatectomy. Will he recover if operated upon?

The residual urine can easily be determined. Its quantity, however, should not be accepted as a guide to determine operability. It has this value: That if it be of sufficient quantity and sufficient duration to cause prolonged overdistension of the bladder, the latter may lose its tone so that it cannot empty properly after a successful operation. It cannot then come back. The operation should be sought before overdistension has occurred, especially before it has been protracted or often repeated.

The quantity of urine voided in 24 hours and the chemical and microscopical examination of it is of the utmost value. Any change in the urine indicative of renal disease should have the most careful repeated study. The function of the kidneys is of vital importance. I am in the habit of depending upon the output of phenolphthalein during the first two hours, although it has been found to be far from perfect. The same information can be had more dependably from a study of the patient's blood. If the functional test shows an output of less than thirty per cent I do not operate. On the contrary, treatment is introduced and the test repeated every second or third day until the output reaches or exceeds thirty per cent. If this minimum cannot be reached it is wise to refuse radical surgery.

The amount of pus, that is to say, the degree of infection of the urinary tract, is also vital. Every effort is made to bring it down to 1° or less. If it cannot be reduced, or if reduced only slightly, or if being reduced once it fluctuates back to a high number of pus cells, it may be accepted to mean that the

patient has a virulent form of infection or a low resistance or both and that he is a bad risk. If at the same time his general condition is bad (toxic) and does not improve under treatment, this is confirmatory of the evidence obtained by the continued high pus content of the urine.

The plan to be followed in reducing the infection of the bladder is to be selected for each individual. Abundance of water, a gallon or more a day, stands perhaps at the head of therapeutic agents for this condition. To this may be added hexamethylentetramin or any of the drugs containing it in sufficient quantity. This plan presupposes that an adequate outlet for the urine shall be provided unless the patient is able to void satisfactorily. If he cannot do this, he may be catheterized at regular intervals, or, if necessary, have a catheter fixed in his urethra so as to allow the urine to escape as it accumulates. In addition to this the bladder should be irrigated once or twice a day, and if pus is abundant or does not decrease, nitrate of silver solution or an emulsion of lactic acid bacilli should be introduced into the bladder after the irrigating fluid is withdrawn. Unless some form of permanent drainage is employed these fluids, an ounce or two, may be injected and left in the bladder. This plan is ideal at least for the lactic acid bacilli.

Two-time operations are rarely necessary. But when the pus cannot be reduced by the practice outlined above, a preliminary cystotomy or urethrotomy should be done and drainage maintained until the condition comes to an operable state.

Cystoscopy of the prostatic has always impressed me as an unwarranted practice for routine procedure. In the majority of cases it can give no indispensable information. In many cases it traumatizes the part unnecessarily, and is often, I am persuaded, an uncomfortable performance even in those whose tracts are not obstructed. If there is a question of importance that can not be settled without its use, then use it. If the question is of minor importance, do not use it.

3.—The coagulation of the blood should always be determined in the prostatic. It is a routine in all my hospital cases of all kinds, except very minor work. This can be done with the utmost ease and is of the greatest comfort to the surgeon in any serious case, and of especial value in a group of cases which have in the past shown a high hemorrhage mortality. If the coagulation time is not as short as four to four and one-half minutes we consider it too high, and proceed to reduce it with calcium salts administered by mouth, or, if these fail, by the hypodermic administration of hemoplastin. Emphasis of the above items is not intended to minimize, but rather to supplement any other preliminary routine or exceptional studies of the patient in hand.

The causes of death in prostatectomy patients are hemorrhage, infection and incidental conditions. While we have no hope of eliminating mortality from operative records, we certainly can reduce it in prostatectomy to a point where this operation may show results that compare favorably with the other major operations and the fear, too often justified, that prospects feel, will be reasonably reduced.

PRACTICAL HINTS IN SUPRAPUBIC PROSTATECTOMY.*

GEO. R. LIVERMORE, M.D., F.A.C.S., MEMPHIS

AS a general rule every prostatic is a poor surgical risk. It is therefore necessary that everything be done to get them into the best physical condition for surgical procedure. There is no doubt that operation and to minimize the effect of any the two step operation has done more to lower the mortality rate than all other measures combined, and yet it is not without its disadvantages. One of the worst features is the formation of scar tissue about the wound that prevents adequate retraction, especially, when there is hemorrhage; and another is the danger of injury to the peritoneum thus adding to the shock and exposing the peritoneal cavity to infection. These can be obviated to a large extent by excising the cicatricial tissue about the suprapubic opening. I now resort to this measure in every case. It can be done under local anaesthesia, adds nothing to the gravity of the operation and is of inestimable benefit, both to the operator and the patient.

In regard to hemorrhage, however, I think the Pilcher or Hagner bag solves this difficulty, for the hemorrhage is easily and quickly controlled by it and the torn edge of the bladder floor is forced downward into the prostatic bed where it will adhere, thus preventing one of the chief causes of obstruction following prostatectomy. The bag controls hemorrhage so effectually, I do not consume much time in ligating bleeding vessels, especially in fat men where it is difficult to get a good view of the prostatic bed. Some years ago the Pilcher bags were so poorly made I had some disagreeable experiences with them, but now that better materials are to be had, they are my main dependence. They are so easily and quickly inserted and control hemorrhage so effectually, we save time and prevent loss of blood, and subsequent shock by using them.

Time is a big factor, but should not be used to the detriment of the patient, in order to

boast that we can remove a prostate in two minutes. Some prostates shell out so easily they are out almost before we realize it, while others defy our best efforts and knife or scissors are necessary to complete their removal.

The surgeon who says he never has any difficulty in removing a prostate, has never had much experience, or else, he thinks the rest of us are exceedingly gullible.

I much prefer an anesthetic; first, because my patient is asleep and does not know what is happening; and second, I feel more at ease when I am sure he is suffering no pain and regardless of what happens, I will cause him none, and he will be in a state best suited to my purpose. I disagree with my friend, Dr. Bugbee, in regard to stabilizing these patients, for often they reach a point of stability without being in condition to undergo an operation. It is, therefore, important to have every test within safe limits before subjecting the patient to operation and then during and subsequent to operation to use all prophylactic and curative measures to promote his safe and speedy recovery.

Having gone thoroughly into the examination and preparation of these patients before both the first and second step operation in previous papers, I shall not take up your time with repetition beyond saying that the success of this operation depends almost entirely upon two factors; thorough preparation and control of hemorrhage. If the patient has been carefully prepared, with all tests within normal limits or nearly so, it makes little difference what operation is done provided the hemorrhage is controlled. There are two factors in the preparation to which I desire to call your attention; first, although a high blood pressure is no contra indication to operation, a variable one is, and therefore, we should not operate until the blood pressure has been more or less stabilized for at least a week prior to operation; second, everything should be done to prevent shock and in this connection Crile's method of injecting novo-

*Read before the West Tennessee Medical and Surgical Association at Jackson, May 11-12, 1922.

caine in the line of incision and also into the prostate and under its capsule is a most efficient prophylactic. Our rule is to give morphine grain one-quarter and hyoscine gr. 1/100 one hour before operation. The field of operation is prepared, novocaine injected in the line of incision and about the suprapubic fistula, the scar tissue dissected out and the prostate infiltrated.

The anaesthetic, gas-oxygen, is now given and the operation completed. Following the operation the blood pressure should be carefully noted every two or three hours or oftener if it is falling. A falling blood pressure necessitates measures to combat shock and should it reach 100 or below, transfusion or Lowsley's gum glucose solution should be given.

THE SEMI-RADICAL OPERATION: ITS TECHNIQUE AND CARE.

W. LIKELY SIMPSON, M.D., F.A.C.S., MEMPHIS

IN this operation when the words semi-radical operation are used the operation referred to is the Heath Mastoid unless otherwise stated. It seems to me that there is considerable difficulty in understanding just how this procedure is carried out and this was especially emphasized at the last meeting of the Southern Medical Society, at which meeting I read a paper on the indication for this operation. At that time some of the members asked that I write a description of the operation and have it published.

In 1912 I saw Mr. Heath do several of these operations at his clinic in London and since that time I have followed his technique with possibly slight change at times. There is nothing unusually difficult about his procedure and anyone capable of doing good radical mastoid work should be able to carry out this technique, but it does seem to me that slightly more care is necessary than in the usual radical operation; especially is this so about the membranous canal, the flap, and the bridge of bone which is left, et cetera. It seems to me that it is very like the radical mastoid and it differs in that the bridge of bone external to the aditus is not entirely removed, the middle ear is left intact and a flap of the superior and posterior wall of the membranous canal is attached to a special periosteal flap from the mastoid.



FIG. 1.

The incision is a curved one beginning just anterior to the attachment of the auricle above and following quite closely the attachment of the auricle and running almost straight down onto the tip; but as you will see in Fig. 1., I have made my incision so near the auricle, as it seems to me a much better periosteal flap is obtained by this means as well as having the line of incision posterior to the bony excavation which I feel is quite an advantage. The incision goes only to the fascia of the temporal muscle above and to the periosteum of the mastoid below.

The skin and soft tissues superficial to the periosteum of the mastoid and the temporal fascia is dissected forward from the line of the primary incision to the membranous canal which is separated from the bony canal superiorly and posteriorly and somewhat inferiorly.

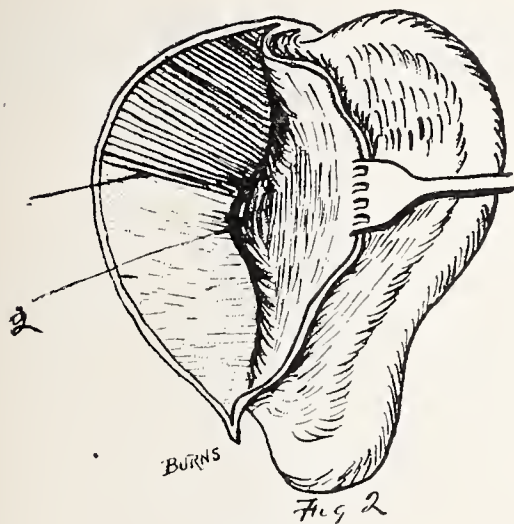


FIG. 2.

Showing the skin and fascia superficial to the periosteum of the mastoid and temporal fascia dissected forward to the membranous canal.

This is quite a tedious part of the operation and considerable time should be taken for the separating of the membranous canal from the bony canal so as to make sure there will be no tear in the membranous canal as a much better flap can be made from an intact canal. It seems to me the separation of the membranous canal can best be done by first making an incision around the edge of the bony canal and then by separating with an elevator such as the Sharp Freer.

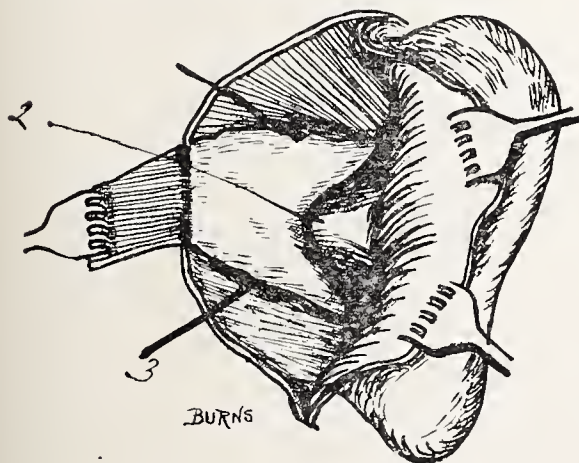


FIG. 3.

1. Temporal muscle retracted upward.
2. Membranous canal retracted forward.
3. Periosteum retracted toward tip.

Fig. 3. Mastoid prepared for bone work.

The superior incision is made by incising the periosteum from before backward just at the lower border of the temporal muscle and the inferior incision is made parallel with the superior beginning at the lower

border of the bony meatus and both incisions extend posterior to the primary incision. The periosteal flap is lifted from its bed beginning at the bony meatus anteriorly and as far posteriorly as the line of the primary incision where it is retracted till the completion of the bone work. After elevating and retracting the lower border temporal muscle upward and soft tissues of the tip downward, the mastoid is now opened, the cells and antrum being exenterated and the posterior bony canal wall removed well down toward the drum. Heath speaks of leaving one-fourth inch of bone exterior to the drum but it seems to me that if less than one-fourth inch of bone is left that a more thorough operation can be done with safety. Of course the Annulus Tympanicus must not be disturbed.

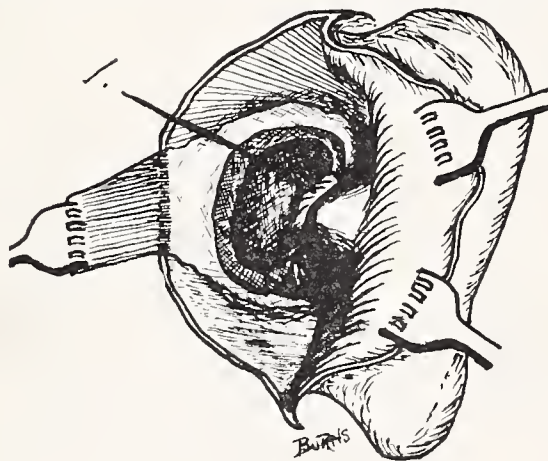


FIG. 4.

Fig. 4. Bone work completed.

1. Small part of bone left external to aditus between antral region and middle ear.

Heath at times removes the bowed part of the bony canal and rarely part of the anterior wall so as to give a better view of the drum, but to me that seems unnecessary. In a good many cases it has not seemed necessary to do any bone work on the floor of the anterior wall. It seems to me that this is entirely different from the canal work which is often necessary in the radical when the middle ear and the Eustachian are under consideration.

At this stage of the operation Mr. Heath may remove polypi or granulations and study perforation. It seems to me that the major part if not all of this work should have been done previous to the mastoid operation.

A special canula is now placed in the an-

tral end of the aditus and the middle ear washed with solutions of the fluid coming through the perforation in the drum. Air is next blown through the same way.

The next step in the operation is the cutting of a single flap from the membranous canal. The flap consists of the superior, posterior and part of the inferior wall of the canal. The first incision is made at the junction of the anterior with the superior wall. The superior part of the incision extends from the external auditory meatus almost to the drum there being a slight downward cut just external to the bridge of bone. The downward incision which is just internal to the external auditory meatus extends from the outer end of the superior incision backward and downward making a flap of the whole superior, posterior, and inferior walls of the membranous canal.

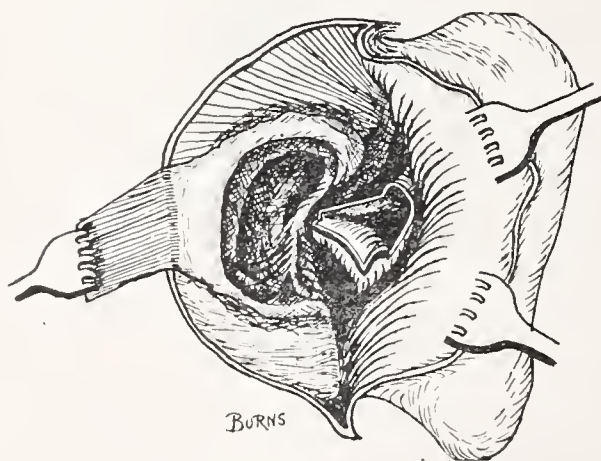


FIG. 5.

Flap cut partially from superior and posterior wall of membranous canal. The downward incision not completed.

The periosteal flap is now brought forward over the bony cavity and the canal flap is now laid upon it and one or two cat-gut sutures inserted to hold the flap in place.

Mr. Heath would now place a small piece of gauze or cotton in the antral region and another on the drum and a piece of rubber tubing in the canal. The mastoid wound is entirely closed with interrupted sutures.

In the course of healing Mr. Heath irrigates the middle ear with his special canula placed in the aditus, the fluid coming through the perforation. It has been a few years since I used the canula at all and I no longer

use rubber tubing at any stage of the healing or operation. At the time of the operation a medium size strip of mastoid packing is placed in the antral region and on top of

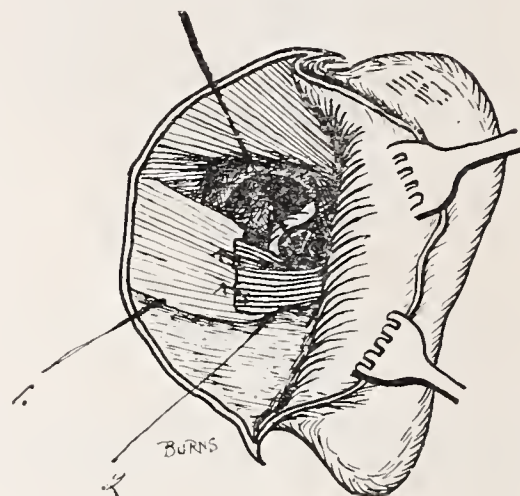


FIG. 6.

1. Periosteal part of flap.
2. Flap from superior, posterior and inferior parts of membranous canal.
3. Membrana Tympani in view after flaps completed.

the flaps of periosteum and membranous canal filling the whole exenterated mastoid cavity. It does not seem to me necessary to place anything on or near the drum. In three to five days the packing is removed the usual treatments carried out as in any other mastoid. As long as there is considerable drainage from the middle ear and aditus, the antral region should be open so as to promote drainage through the aditus from the middle ear.

It has been my experience that if alcohol packing is used for several days after the first dressing is removed that the discharge soon becomes very scant and after about ten to fourteen days a mixture of alcohol and boric can be dropped in the ear without other treatment and good final result be obtained. In a few cases skin grafts over the facial ridge near the drum and up toward the antral region have seemed to keep down granulations and aid in healing. My best results have been obtained on cases which have been seen practically every day and in which the after care has been very carefully carried out. To my mind the after care is very important and if neglected will often account for some of the bad results which have been reported.

As healing takes place and the discharge stops the small perforations may close but of course the large ones do not change their size.

DISCUSSION

P. M. FARRINGTON, M.D., Memphis: The description of the Heath operation by Dr. Simpson leaves nothing to be added. The procedure deserves a permanent place in aural surgery, and its results in selected cases are most gratifying. My only modification in a few instances has been to make the regular mastoid incision with a T shaped flap, the lower flap being broader. These answered quite as well as the more elaborate soft tissue work of Heath. After the first two or three cases I also dispensed with the canula and air douche, and contented myself with delicate cotton wipes, moistened with alcohol and with caring for granulations in the usual way. For drainage the first few days, I used a cigarette drain or spiral rubber tube, carrying a loose strip of gauze. These drains were removed on the third or fourth day, and only wipes used thereafter. In certain instances nature practically performs a Heath or modified radical for us, and I have always deemed it good surgical practice to consider Nature's desires and to aid and abet them wherever we can. I recall the case of a woman, aged about forty-five, who was seen in consultation at her residence, and who was suffering great pain in her ear. She gave an indefinite history of discharge for several years with occasional periods of pain. A bulging area could be seen deep in the canal along the posterior, superior aspect, completely occluding the canal. Under general anaesthesia, this area was freely incised. The probe entered through a bony opening, and found its way to the antrum. I, fortunately, had a slender curette with me, and cleaned out this bone cavity as thoroughly as I could through such an opening. The patient was advised to have a radical mastoid operation, but promptly declined. This wound was carefully drained and prompt healing ensued. The ear has remained dry and free from pain for the past ten or twelve years. A second case comes to mind. A law student, who presented himself, complaining of great pain for a period of several days and history of a discharging ear for two or more years. The membranous canal, just external to the drum, was bulging over the posterior aspect. After making a free incision over this area, the probe passed readily into the antrum. Recalling my first case and its splendid results, I curetted the bone cavity through this opening. This work was not sufficient, however, and I later entered the bone from behind, doing a Heath, and completing Nature's effort. The wound promptly healed, and the opening in the drum closed. After seven years the ear re-

mains dry with useful hearing, watch 12 inches, and whisper at 8 feet. Where both ears are involved and where we have useful hearing we must have in mind two things—the preservation of hearing and the protection of our patient's brain. Happily, the Heath, or modified radical mastoid, has answered my requirements in a large number of instances. Finally, if we fail to effect a cure by this operative procedure, we can readily convert it into a radical.

I feel, therefore, there is a definite place for this operative work, and that we should give it consideration before doing the radical mastoid operation.

JOHN J. SHEA, M.D., MEMPHIS: The incision varies according to the operator's choice. I prefer to make it as close as possible to the auricle, in order that the incision may be brought down to the bone at the margin of the external auditory meatus.

The ridge should be reduced level with the floor of the canal to expedite the aftercare of the meatal-antral space. On several occasions I have used a dental wax compound to make an impression of this space and used it as an obturator. The dressings should be done by the surgeon if the best results are to be obtained. The aditus and antrum must be closed off by the process of healing and then the antral-meatal space must dermatize without being obliterated. Radium will reduce excessive granulations better than any other agent and may be utilized when the healing is retarded by the granulations.

The use of suction instead of wiping will save time during the operation. For this purpose we use an intranasal suction tip, modeled after the one designed by Walker.

The Heath semi-radical operation has its place and should not be condemned. If it fails, you have not lost anything, and conversion into a radical is very simple.

DR. CHAS. D. BLASSINGAME, MEMPHIS.—Mr. Chairman, the basis of the thing Mr. Heath is driving at in his operation is this: After removing the pathology behind the middle ear, to direct the subsequent part of the operation that a clear approach to the aditus ad antrum is effected, so that this field can be reached through the external auditory canal and so treated that new tissue will form and separate, entirely, the middle ear from the mastoid antrum. When this is accomplished, it does not make much difference what method of treatment is used to heal up the cavity posterior to that. Every man has his own pet scheme—one uses a periosteal flap, another a skin graft, etc., but we must not forget that the primary object is to separate the middle ear from the mastoid antrum with new healthy tissue.

There are two or three considerations involved. Where does this new tissue come from? Not much of it comes from bony growth, because new bone grows very slowly. I think the larger part of it is produced by the mucous membrane of the middle ear and the mucous membrane lining the aditus ad antrum itself. Healthy granulations also advance from the skin flap and make their contribution of new tissue.

I certainly congratulate the section on the way the subject has been presented by Dr. Simpson with the pictures. There is one important point, however, which Mr. Heath emphasizes in his operation that has not been brought out. That point is this: To cut away the unhealthy skin used in making the flap. The skin on the posterior meatal wall of any discharging ear, up near the drum, is unhealthy. It is constantly bathed in pus, and so is oedematous and more or less infected. If this skin is turned back with any type of flap, it has a great tendency to produce large, unhealthy granulations that soon block off the approach to the aditus ad antrum, and so hinder the subsequent treatment of that part. So, Mr. Heath emphasizes the importance of renovating the unhealthy skin near the drum that would otherwise be included in the flap. In advocacy of Mr. Heath's technique, I will recite two cases. One of them was a young lady about twenty-four or twenty-five years of age, who had a chronic discharging ear with a foul odor and decreasing hearing for fifteen years. It was very objectionable to herself and to all her people and associates and she was going to the doctor constantly to be treated for it. We did a Heath mastoid on this ear fifteen months ago. It took two months for the ear to get well. Since that time there has not been a crop of discharge nor any other symptom from this ear. Her general health has grown much better and the appreciation that the family shows is enough to pay me for considering the Heath in any similar case.

The other case was a lady about forty years of age with an ear that had been discharging, profusely a thick, yellow, foul-smelling pus for about a year. Her general health was poor. She was very nervous and had frequent headaches. She had every appearance of one who had foul infection. We did a Heath mastoid on her twenty months ago. She was well of the operation in about six weeks. The ear has been perfectly free of symptoms since that time. Her general health rapidly improved. Her headaches have not returned and she has gained eight or ten pounds in weight. I say that, because I feel that we should consider these cases from the standpoint of focal infection.

ful drawings that Dr. Simpson gave us. I am always pleased to see a member of our section devote that much time and effort to produce that beautiful work, which so graphically shows his technique. I think Memphis is the headquarters, now, of the Heath operation I believe more Heath operation is done in Memphis than in any other place, unless it is in London. I do not know how he is getting along now, but I had the great pleasure of seeing Dr. Heath. He invited me to be present at his operations; he is one of the most courteous men I ever met, and most anxious to show his work and demonstrate the value of this operation. Also, I don't think I ever knew any man who was more the victim of local prejudice, perhaps, than Heath. I don't think I met a single aural surgeon in London who had a good word to say for Mr. Heath. I don't know whether it was Heath's success, or whether it was the lack of belief in the operation, or in the claims that he made for it, or what, but some of the best men in London, who were associated with him in his clinics, and who were under him, in a way, told me that oftentimes Mr. Heath would want an operation to demonstrate to visitors, and he would ask them "now call up so and so, and put him on for an operation." They said they would call up this patient, or get in communication with him, and say the ear had gotten entirely well, no trouble now at all. Their claim was that Heath might operate on a great many cases which were not suitable for mastoid surgery; and aside from his immediate organization, in which seemed to be the men that I could find out who believed in the Heath operation, there were none who had a good word to say for him.

Now, I must confess, myself, that I cannot see a great deal of difference between the Heath operation and a refined simple operation. It seems to me if you do a simple operation, you do very little more in the Heath than you do in the simple operation. It seems to me if you give the same attention and care to after treatment of a simple operation, keeping it open and attending to it, as it is necessary to do in the Heath operation, that you might achieve the same results. I think Heath got a very black eye in this country, when he came over here and did those operations, and trusted the aftercare to men who were not familiar with the technique or who were not sufficiently interested in it; of course the two men he had with him were the best men we had in this country, but not being in sympathy with it, it was hardly fair to him or to the patient, to have them looking after the patients. I read the history of those patients, and they were treated for months afterwards, most of them stayed in the hospital six weeks or two months, and were treated in the convalescent department for a month or six weeks or two months.

M. M. CULLOM, M.D., NASHVILLE.—Mr. Chairman, I do not think we ought to let this paper pass without expressing our appreciation of the beauti-

But I am very glad that this subject is being pursued and carried out in the beautiful detail that they have here in Memphis, and I trust that they will be able to establish a procedure. I think that the contribution that Heath has made principally to mastoid surgery is the respect that he shows for the middle ear. When he began his work, the radical operation was very common. Patients with simple discharge from the ear were being subjected to radical mastoids right along; we were getting fatal cases in apparently simple operations, I mean simple discharges of the ear. Those were frequent. We do not hear so much of that now. Of course one reason they got fatal results in those subjects was, they did not understand the rôle that the vestibule played; they were often operating in the cases with a dead labyrinth followed by meningitis. But altogether, I think Mr. Heath's influence on radical mastoid surgery has been good; whether his operation is good or not, and I have to congratulate our friends here in Memphis that they have followed this up and done such beautiful work.

HERSCHELL EZELL, M.D., NASHVILLE.—I just want to ask Dr. Simpson a question, and that is: to what extent the mastoid cells are removed? It has been my understanding, so far as I understand the Heath operation, that he pays little or no attention to the cells other than the mastoid antrum. I may be wrong about this. I would like for Dr. Simpson to explain that point.

DR. W. LIKELY SIMPSON, MEMPHIS.—There are three or four points which I might emphasize. The first one, as Dr. Farrington says, is that the canula of Heath seems to be of little value. I practically do not use it at all. I do not use the rubber tubing as Dr. Heath does. I use an ordinary narrow packing; any of you who were present at the operation yesterday morning know that the packing we had to use was too wide, it should be

nice thin, pliable packing, which one can place anywhere necessary, instead of the big, heavy pieces such as we had yesterday morning.

Dr. Shea mentions the low ridge, which I think is very important. We should get this ridge down flat, the same as you would if you were doing the radical mastoid operation, so the flap will lie perfectly flat, and drop into the tip of the cell region if necessary.

I think the use of radium is another advance that we should not forget. Certainly when granulations are piling up, which I think would be rather seldom, if we use dry treatment, alcohol, etc., radium would come in very nicely.

As to the skin at the canal towards the drum being diseased and so on, I seldom use the Heath in acute cases. Occasionally I do, but the usual case in which the Heath mastoid operation is indicated, the skin is in rather good condition. I have had no trouble with the skin being infected or starting granulations, or anything of that kind. I have made no attempt to cut off any of the skin of the canal as Dr. Blassingame mentioned that Mr. Heath does at the present time.

As to Dr. Cullom's questions, he mentioned the fact that there is very little difference between the Heath mastoid and the simple. I think there is quite a difference, especially from this viewpoint, that we get as continuous drainage over a great deal longer time than you can possibly get from a simple mastoid which is closed up at once either by the blood-clot method or any other method; we keep the aditus open; we keep the antrum open; we get granulations to heal the antrum region off from the middle ear. That only takes place after some little time and certainly not in three or four days as it would in the ordinary simple mastoid.

As to Dr. Ezell's question as to whether we would remove the mastoid cells to the tip, I would say we remove all pathology of the mastoid cells, antrum aditus and zygomatic cells.

THE SYMPTOMATOLOGY OF MASTOIDITIS*

JOHN W. MOORE, M.D., NASHVILLE

THE subject of Mastoid abscess and its management is one which is to me of ever recurring interest and though much written about always seems to permit of some additional comment that is of legitimate interest. It is not at all my purpose in this modest effort to present in complete form the diagnosis and treatment, both operative and otherwise of this condition, but merely to suggest to you in brief outline observations I have made and my own opinion as to the relative value of certain parts of the symptomatology.

Mastoiditis (or I should say mastoid abscess) for I intend all comment in this paper to be referable to a condition in which some degree of pus formation has taken place) is like other conditions that a surgeon is called on to consider in that its presentation of symptoms much more often than not does exhibit the complete picture usually described. It is not often difficult to determine that some degree of mastoid involvement has taken place but the determination of the stage to which it has progressed is another matter and in spite of the application of all known means of diagnosis, sometimes remains in doubt.

Pain is a symptom most rarely absent and usually severe. Moreover, its description by the patient is oftentimes in the words of the text-books. They describe it as being severe, deep-seated and boring in character, worse at night. Its severity is a notable feature and relief with drugs is difficult or impossible. During the progress of the case after establishment of drainage by way of the middle ear, either by spontaneous rupture of the drum or incision, pain is usually variable in its intensity and it is regularly observed that when discharge lessens the pain becomes more severe and where it is profuse the pain decreases.

Tenderness is usually present but in a fair number of cases may not be elicited. I have seen a number of cases which have progressed to operation in which there was never any tenderness. This symptom, however, has, I think been made too much of. Its absence is not conclusive and its presence depends much for its diagnosis value on its location. If there is tenderness over the mastoid antrum then its worth is little for the mastoid antrum is anatomically a part of the middle ear and I have observed tenderness over this region in a great many cases of simple purulent otitis media where there proved to be no mastoiditis. I think this cell to be involved in some degree in nearly all such cases.

Much too often I have seen a surgeon open the antrum and when the pus welled up say, "Ah! that confirms our diagnosis," and then proceed to excerate a lot of cells which were at least macroscopically entirely healthy. This idea may be provocative of discussion and I do not wish to be misunderstood. I am aware that there may be mastoid abscess so localized as to produce tenderness over this area, but rarely so, and I, therefore, think that the point I have made is of value.

If there is pronounced tenderness over the tip and body of the mastoid then this symptom becomes of great importance and is largely diagnostic. Care should be used in eliciting this sign, however, and the surgeon will remember that a periostitis of the mastoid may occur in conjunction with furunculosis of the canal.

Swelling is often present but may often be absent even in quite severe cases. It is most constantly observed in children in whom sub-periosteal abscess is common. The external layer of bone is much softer in children and it is much easier for the pus to find its way to the surface. On the other hand, the internal plate separating mastoid cells from cranial cavity is relatively hard and this is important. If we remember this in children

*Read before the West Tennessee Medical and Surgical Association, Jackson, May 10-12, 1922.

the surgeon may with much more mental comfort delay operation, knowing that there is not near the chance of epidural abscess and sinus thrombosis that exists in adults. Out of quite a large number of cases of mastoids in young children I do not now recall a single one which had these most grave complications.

Redness will not, of course, exist except in association with swelling or at least to such an extent that it has any diagnostic importance.

A sagging of the posterior-superior canal wall near the drum is often observed. It is due to a periostitis of small area which will often occur in this locality, is of considerable diagnostic importance and is considered by some excellent surgeons to be of profound importance. I think it of material value but hardly to the degree I have seen it exploited.

A blood count should be done as a matter of routine in all cases unless the surgeon has a very complete picture without the information it offers. I have it done as a matter of invariable routine and think this course should be pursued. There is to be observed in operative cases an increase in leucocyte count which will run to twelve to fifteen or eighteen thousand and a large increase in the per cent of polynuclear neutrophils.

A means of diagnosis in mastoiditis which has deservedly attained large importance especially of late years is the employment of skiagraphic plates and their use has become almost routine in the making up of a diagnosis of this condition. This is as it should be and its importance can hardly be over emphasized. There are, of course, cases in which the picture is so complete without that it becomes unnecessary to subject the patient whose means may be limited, to the extra expense of having head pictures taken but I consider that it is necessary and that skiagraphs should be made in the great majority of cases.

The involvement of the cells will almost always be demonstrated in the clearest and most conclusive manner and in contrast with the picture of the other mastoid leave no doubt in the mind of the surgeon as to the character of the case. There will appear on the plate a blurred lighter area over the mas-

toid on the affected side due, of course, to the passage of the ray being interfered with by the pus and an obliteration of the characteristic mottled appearance of a healthy mastoid due to the fact that the trabeculae, or little partitions of bone separating the cells, have been, at least, to some extent broken down by the disease process. The reading of an X-ray plate I find to be infinitely more intelligent when done by the roentgenologist. If one has to deal with double mastoid abscess which is not very unusual then the contrast between the two plates, of course, ceases to be of value and our decision as to whether the plates do or do not show disease must be predicated on their variation from what our conception is of the healthy appearance or by comparison with other plates of known healthy mastoids.

In discussing the use of x-ray plates in the diagnosis of this condition I would like to mention a possibility of error and what I conceive to be its cause though it is pure conjecture and may be faulty reasoning. There are two things observable in a picture of a diseased mastoid on which a positive opinion, as I have mentioned above, is based;

1. Blurring of the field.
2. Obliteration of the characteristic mottling of the field by the trabeculae and this second characteristic will be pronounced or not according to the virulence of the infection and the degree of advance of the destructive process. In a case which we had recently, we were deterred from operating for the time being by the fact that while the plates showed disease the trabeculae stood out clearly and distinctly. This case did not otherwise have the symptoms of mastoid abscess clearly defined. He was slightly tender, the ear drums were perforated and discharging pus, there was no redness, no swelling, only moderate complaint of pain and his leucocyte count was, if I remember, about eleven or twelve thousand. Both mastoids were involved so there was not to be had the usual valuable contrast between a healthy mastoid on one side and a diseased mastoid on the other. Subsequent operation which was done really through fear of what might happen revealed unusually extensive disease on both sides.

Now in this case the cells were very large—a pneumatic mastoid, as we say—and I undertake to explain why the disease was not shown more clearly by this theory. In very large celled mastoids the partitions are thicker and harder bone than in those of more usual type and therefore more resistant to necrosis. Furthermore the total amount of bony tissue was much less and although these cells were filled with pus there was really much less of material interposed to impede the passage of the ray than there would have been in a mastoid of another type with a more moderate amount of disease.

Whether or not the conjecture above really explains why a cleared picture was not ob-

tained is a matter of conjecture but certainly suggests rather strongly the difficulty of determining the degree of involvement by the application of all means of diagnosis. For my own part I am frank to say that while I know that a fairly large per cent of mastoids resolve without operative interference I am never comfortable during this period. The case above referred to had a disastrous ending and while I am not at all sure it would have ended differently had I operated sooner I wish that I had done so. My rule about this condition is when in doubt, to operate, and I am sure the mastoid mortality is lessened by adherence to it.

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DEEP RADIOTHERAPY

Deep x-ray therapy, initiated by German radiologists and physicists and promulgated by others throughout the scientific world, has occupied the center of attraction at all radiologic meetings for the past two or three years and is beginning to gain the attention of the entire medical profession. Dessauer, Seitz and Wintz are pioneers in this branch of scientific research and have reported some astounding results in the treatment of uterine carcinoma. Although radiologists of this country have not met with such favorable success, they are convinced that great progress in therapy has been made. If radiation by the modern method never reaches the high plane of attainment that is hoped for, the German idea has revolutionized the entire field of deep therapy.

Within the last two or three years more research has been made with x-rays than ever before. Research men, physicians, physicists, college professors, and electrical engineers have put forth untiring efforts in order to perfect apparatus and to establish the proper technique for intensive radiation with as little harm as possible.

The theory of high voltage radiotherapy is unquestionably very logical, but only time and a study of end-results will determine its actual value. There can be no doubt that a greater dosage can be obtained with the use of high voltage, heavy filtration, and large surface areas than by the old plan of using numerous small areas of radiation administered with low voltage through light filters. It is fairly well understood that more secondary radiation is produced within the tissues, which is beneficial in treatment, with each increase in the size of the skin area up to a certain limit which is approximately twenty c.c. square. Consequently the small portal

of entry procedure so universally employed a few years ago is being rapidly replaced by the more modern technique.

Granting that this plan of treatment gives the patient more radiation in remote lesions, there are many other factors to be considered. An increase in voltage of x-ray pressure produces hard short wave length type of rays which have a greater power of penetration and some careful observers claim that the biologic effect of the rays is proportional to the wave lengths. If this is true very little value can be obtained by increasing the voltage if a large dose of hard rays does not arrest the progress of malignancy more than a smaller amount of rays of different quality. Nevertheless the majority of radiotherapists attach very little importance to this theory and contend that the biologic reaction is proportional to the amount given.

Radiation by the high voltage technique is attended with more dangers to both the patient and the operator than was formerly encountered. Great skill and care must be exercised to prevent fatal x-ray burns. Intense radiation has a deleterious effect on blood cells of all kinds and anemic subjects should be treated very cautiously.

While x-ray therapy is still in this unsettled condition it behooves all who treat malignancy not to be over enthusiastic and resort to deep therapy alone, jeopardizing the lives of their patients with experimentation. No careful observer can doubt the importance of radiation, but its value can be very easily overestimated. There is no reason for the sole use of x-ray therapy so long as malignant cases are amenable to supplemental measures. Certain strains of malignant cells are more sensitive to radiation than others and the most sensitive carcinoma of the uterus may respond to x-ray treatment, but why should a patient's chances for recovery be reduced when there are additional measures available. The more favorable cases, especially those in whom the fundus of the uterus is involved, lend themselves to radical excision both anatomically and surgically. However, they should receive a thorough preoperative and postoperative radiation.

It is doubtful if x-ray therapy alone will ever be a safe procedure in all remote malignancy.

nant processes. The biologic behavior of malignant cells varies with the degree of malignancy and many of them are more resistant to radiation than normal tissue. However this fact does not detract from the value of deep x-ray therapy. Most sufferers of malignancy can be benefited by radiation if correctly applied. A higher percentage of cases can be attained by surgical means if preoperative and postoperative radiation is taken advantage of. Lesions that are inaccessible to surgery in which radium is indicated may also receive a more homogenous x-ray radiation plus the local application of radium. Many early inoperable subjects can be rendered operable by a reduction in the size of the growth and by blockage of the lymphatics. Improvement is frequently noted in inoperable cases following adequate radiation. This is particularly true in old people in whom the growth is slow. Radiotherapy retards the growth energy of the cells and tends to render the tumor more scirrhous by the stimulation of fibrous tissue.

C. M. H.

CANCER WEEK

The week of November 12-18 was selected by the American Society for the Control of Cancer as a period during which special efforts were made to acquaint the public with the early symptoms of cancer. This education is intended to lead the patient to seek a physician as early as possible, since it is well known that in early eradication lies the only remedy. In various states, special committees have been formed to present every phase of the work. Newspapers, lantern slides, motion pictures, and messages delivered through the churches are being utilized to arouse the public. Physicians are, of course, either leading or lending their aid in the movement. As we have stated before, this attempt to educate the public to the fact that cancer in its early stages is remediable should be continuous and not the forced effort of a week. "Cancer Week" is a splendid means for working enthusiasm to its highest pitch; but this enthusiasm should not be permitted to relapse. There is no health problem more

vital than that of arousing the public to the importance of early recognition of cancer.—J. A. M. A.

DR. E. L. BISHOP AND THE INTERNATIONAL HEALTH BOARD.

In its report for 1921 the International Health Board states that in the autumn of 1913, soon after the beginning of its operations on an international scale, the Board faced the fact that in order to carry out the activities it had undertaken it must have a staff of trained hygienists. In accordance with this policy the Board contemplates contributing from time to time, toward the development of a limited number of schools throughout the world. In the meantime, however, the Board is taking advantage of the facilities now offered in England, the United States and Canada, for the training of students from their own and other lands; and has provided by means of fellowships for a limited number of students to pursue courses in these countries. Fellowships have been granted to students who have been carefully selected with reference to their fitness for important posts as scientists, teachers or practical administrators in the public health service, to which in most cases they have had definite assurance of appointment on completion of their courses. Dr. E. L. Bishop, Director of the Bureau of Rural Sanitation, on our own Tennessee State Board of Health, has just been, deservedly, awarded one of the above mentioned Fellowships from the International Health Board and he has already gone to Johns Hopkins University, at which school he will follow this line of study until June 12, 1923, during which time he has been granted leave of absence by the Tennessee State Board of Health. This is the first of these Fellowships to be awarded to a resident of Tennessee and all of the many residents of the state, both lay and professional, who are acquainted with the many effective activities of Dr. Bishop in connection with the Tennessee State Board of Health, during the past six years, will heartily endorse his selection by the International Health Board for this important work.

Dr. Bishop's first connection with the Tennessee State Board of Health was in 1916, as Field Director and was made State Director in 1918.

"The antivivisectionist," says George Jean Nathan, "strains at a guinea pig and swallows a baby."

For the convenience of the members of this association a list of the names of all its officers and members of the standing committees, together with the names and addresses of the secretaries of the component county societies, was printed in the Journal for the first time in the October issue and will be continued. It is to be found in the advertising section in the back part of the Journal.

COUNTY SOCIETIES

JOINT MEETING MEDICAL SOCIETIES, WALNUT LOG HOTEL, REELFOOT.—NEW MEDICAL ASSOCIATION ORGANIZED.

Twenty-six physicians from Fulton and Hickman counties, Ky., and Obion and Dyer counties, Tennessee, met at Walnut Log Hotel, Tuesday, October 11, and organized a Medical Association for the joint purpose of scientific inspiration and social recreation. The following officers were elected to perfect the organization, which hopes to include as honorary members some of the leading members of the profession: President, Dr. H. E. Prather, Hickman, Ky., first vice-president, W. F. Peoples, Clinton, Ky.; second vice-president, M. A. Blanton, Union City, Tenn.; secretary, Ira Park, Union City, Tenn.; and R. L. Motley, treasurer, Dyersburg, Tenn.

Interesting papers were read by Drs. Miles, Betha, Baird, Boyd and Hubbard. These papers were well received and liberally discussed by those present.

The following men enjoyed the hospitality of the Fulton County Society: Drs. Blanton, Watson, Miles, Latimer, Park, Union City; Baird, Motley, Brewer, Dyersburg; Speed, Mann, Bethea, Memphis; Marshall, Mulherin, Hornbeak; Morris, Prather, Baker, Hubbard, Curlin, Hickman, Ky.; Henry Alexan-

der, Geo. Crafton, Cohn, Paschall, Fulton, Ky.; Boyd and Reynolds, Paducah, Ky.; Mahan, Moscow, McMorris, Moss, Peebles, Clinton, Ky. (

The following is an excerpt from the "Memorial Address" given by Dr. C. W. Miles, of Union City.

"Gentlemen: No higher honor could have been conferred on me than to have been appointed to speak in memory of the dead physicians whose names I have mentioned and whose traits of character I have feebly tried to portray.

"Standing here with the recollections of over half a century of membership in this the noblest and most learned profession known to man, the memory of these dead friends and heroes is as holy as remembered kisses of our dead ones.

"Death! Throughout all the ages the question has been asked: If a man die, shall he live again? We have been taught that he will, and yet hidden deep down in our souls death and its sequences is a mystery of mysteries. We stand as it were on the shore of an unknown ocean. We cry out across its waters, and no answer ever comes back to us. Not even an echo of our own voices. We ask it of hills that seem eternal and of the streams that flow on forever, and they answer not. All is like the silent sphynx brooding on the silent world. But when we contemplate the works of these dead physicians, when we consider their sacrifices, their patience, their self abnegations, their steadfastness in the presence of death, we believe that they do and shall live again, whether they not only live but take cognizance of the current incidents of this our present life, whether they know their own labors that do follow after them, or whether they have bathed their tired bodies in Lethe's waters and forgotten all that lies behind or whether they still sleep, we know not. Dr. Oliver Wendell Holmes, in his little book, entitled "Medical Essays," says that Nature has provided three methods of relief for suffering humanity: Sleep, Syncope and Death, and the greatest of all is death, because it is a permanent cure. I believe this and I believe that these, our dead brothers, are at rest.

"I commend to you their lives, their deeds,

and their immortal spirit of sacrifice.

"And in conclusion I would commend to your memories these slightly paraphrased sentiments which I quote from the poet Swinburne:

"Dreams that lips once breathless
Might quicken if they would;
Say that the soul is deathless,
Dream that the gods are good;
Say March may wed September
And time divorce regret,
Say our death may not remember—
But not that we forget."

DEATHS

RESOLUTIONS ON THE DEATH OF J. BRIEN ADKERSON, M.D.

Obion County Medical Society,

Union City, Tenn., October 10, 1922.

Be it Resolved, That we, the members of the Obion County Medical Association, feel that in the death of Dr. J. Brien Adkerson, of Union City, Tenn., which occurred at Dawson Springs, Ky., on August 27, 1922, where he had gone for rest and recuperation, we have lost a true and genial friend, a useful member, and a valuable confrere, whose passing will be felt alike by colleagues and clientele.

Be it Further Resolved, That we as a body, the Obion County Medical Association, express our sympathy, and offer our sincere condolence to his bereaved wife, and other members of his family.

Be it Further Resolved, That these resolutions be spread upon our minutes, and that the secretary furnish a copy to Mrs. Adkerson, his aged mother, and also one to the State Journal.

Respectfully submitted,

F. W. WATSON,

J. D. CARLTON,

Committee.

MEDICAL NEWS AND NOTES

OPENING OF THE SCHOOL OF MEDICINE OF THE UNIVERSITY OF TENNESSEE, MEMPHIS.

The total enrollment for the year is 176. It has been found necessary to limit the admissions

to the first, second, and third year classes to fifty students in each class, as the present physical plant will not accommodate more than this and allow the present standards of instruction to be maintained. The enrollment of 176 students this year is to be compared with 110 last year and 56 year before last.

With the increase in the number of students it has been necessary to secure additional teachers. The following new men have been added for the present year.

Dr. Edwin B. Powers becomes Associate Professor of Anatomy. Mr. Walter J. Scott becomes Instructor in Anatomy. Dr. T. P. Nash replaces Professor H. E. Morrow as Professor of Chemistry. Mr. L. O. Leach and Mr. B. K. Harned become Instructors in Chemistry. Mr. Arcadie Giura becomes Instructor in Bacteriology. Dr. Paul Ireland becomes Assistant Professor of Surgery and Dr. O. E. Smith, Assistant Professor of Medicine. Dr. Ireland and Dr. Smith give their entire time to the College of Medicine.

The new hospital for the treatment of contagious diseases is now about ready for occupancy. It has a capacity for fifty-two beds and has been most carefully planned for the treatment of contagious diseases.

OPENING OF THE SCHOOL OF MEDICINE, VANDERBILT UNIVERSITY, NASHVILLE

The opening of the School of Medicine, Vanderbilt University, this fall was the most auspicious in the history of this department. The standard for admission is the highest that has ever been required. The freshmen class was limited to fifty and these fifty were selected according to the quality of pre-medical work completed. It was not an easy task to select from several hundred applicants the limited number to be admitted, and as a result of the provision of quality and quantity of college work completed, more than one-half of those who have been accepted are college graduates and the majority of the others are men who have had three years of college work. This means that the School of Medicine has practically a three year entrance requirement, for, of the men who have had but two years of college work, only those have been accepted who have done noticeably good work. Many applicants holding Bachelor degrees had to be turned away because they applied after the limited number had been accepted. It would appear that the higher the requirements the greater the number of applicants, for young men all over the country seem to appreciate the value of thorough pre-medical training, and the ambition to hold a Bachelor's degree together with the M.D. is growing.

The reason for limiting the classes is that no more students may be allowed to enter than can

be given the best facilities possible in every respect, for the school is anxious to turn out men who will be practitioners of medicine. It has been embarrassing to be compelled to turn away so many excellent students on account of limited hospital and clinical facilities, but when the new school is located on the West Campus and these facilities are doubled it is hoped that all applicants can meet the requirements and obtain admission.

Over thirty-three and a third per cent of the men in the School of Medicine are working their way through.

For the past two years transfers have not been accepted from any school. This year only two transfers were accepted and these entered the sophomore class, after presenting splendid records from Class A schools. There were no vacancies in the junior class, and, as announced in the catalogue, no student is admitted to the senior class, regardless of vacancies or the school that he has attended.

A new course has been added in the senior year, consisting of sixteen lectures on the History of Medicine. These lectures will be given during the second term and will fill a much-needed want in rounding out the fourth year in medicine. Some of the full-time professors spent the summer abroad, gathering valuable material to be used for teaching purposes. Altogether this year promises to be the best in the history of the School of Medicine.

MISCELLANEOUS

LIMITATIONS TO THE USE OF QUININE INTRAVENOUSLY IN THE TREAT- MENT OF MALARIA

KENNETH F. MAXCY,

ASSISTANT SURGEON UNITED STATES PUBLIC
HEALTH SERVICE. FROM THE PUBLIC
HEALTH REPORTS, MARCH 24, 1922,
PAGES 693-701.

Recently, along with the growing popularity of intravenous medication of various sorts, the intravenous injection of quinine has become a common and widely used procedure in the treatment of malaria than formerly. *A priori*, the method appeals to one as being rational. It affords the opportunity of introducing the drug in known concentration directly into the blood stream in which the parasites are living. Theoretically it is the most exact and most effective mode of approach in the chemotherapy of malaria.

From the practical point of view, on the other hand, ever since the method was first advocated by Bacelli¹ it has been apparent to those who had large experience with the method that there were certain limitations to its field of usefulness. Without attempting a chronological review of the literature on the subject, it is the purpose of this paper to call attention again to certain dangers in the procedure and the precautions necessary in its use, with a view toward defining anew its proper field.

In judging the value of a method of treatment of malaria it is important to bear in mind that two objects are to be accomplished: First, the patient must be relieved of his acute attack; second, the parasites in his body must be damaged or destroyed to a degree that renders a relapse unlikely. While it is relatively easy to obtain data regarding the first requirement, it is rarely possible to follow up a sufficiently large series of treated cases over a sufficiently long period (at least six months and preferably a year or more) to establish the second point.

In this report attention is confined to the use of intravenous injection of quinine in the cure of the attack. The second point, i. e., the prevention of relapse, has been covered quite satisfactorily in recent war literature dealing with the treatment of thousands of cases of malaria among the soldiers returning from the Mediterranean war area. In these studies^{2 3 4 5} no evidence was obtained to indicate that the intravenous route of administration was more effective than ordinary mouth administration in the prevention of relapses. The questions formulated, then are: What are the dangers in giving quinine intravenously? How can they be avoided? What clinical indications for the method?

¹Bacelli: Gaz. degli. Osped., Feb. 1890. Piform med. 1890, 6.

²Mayne, Bruce, and Moss, M. M.: Abstracts of the studies which were made at the request of the British War Office. Reprint No. 629 from Pub. Health Rpts., Dec. 24, 1920, pp. 3082-3091.

³Zweig and Matko: Wien. klin. Wchnschr., 29, 1916, pp. 1516-1522.

⁴Hehir, P.: Ind. Jour. Med. Res. (Sp. Ind. Sci. Number) 1919, pp. 89-100.

⁵Acton, Hugh, W. et al.: Ind. Jour. Med. Res., 8 (Apr.) 1921, pp. 750-871.

The dangers in giving quinine can best be illustrated by some observations made in a series of cases in which this method was used without the safeguards that have been recommended, but with a technique that is not unusual in hospital and private practice. The plan of treatment was as follows: As soon as the diagnosis of malaria had been established, the patient was started upon a course of intravenous treatments *by routine*. The drug used was the double salt of quinine and urea hydrochloride. The preparation is marketed in solution in sterile ampules, 7 1-2 grains each in 1 c.c. solution. The contents of two ampules (15 grains) was taken up in a 2 c.c. Luer syringe and injected into a vein at the bend of the elbow. This dose was repeated daily until from five to eight treatments had been given. The oral administration of the drug was then begun. The amount of this after-treatment varied within wide limits and was not looked upon as essential.

The result of this plan of treatment must be judged not only from the point of view of its effect upon the parasite in the blood stream, but also upon the patient himself. The ideal of chemotherapy is that the drug should be so administered as to "select and destroy the parasitic substance, *leaving unscathed the protoplasm of the host*."⁶ The latter requirement is more important than the former in a simple uncomplicated case of malaria, in which the natural tendency is ordinarily toward spontaneous cure. Quinine injected intravenously into man may manifest quite definite effects upon the circulatory system, the nervous system, and upon the skin and subcutaneous tissues when these are involved at the site of injection.

A. EFFECT UPON PATIENT

1. *Circulatory system*.—It has long been known that quinine is a circulatory depressant. In this connection it is interesting to note that the closely related alkaloid, quinidine (the dextro-rotatory, stereoisomer of quinine) has recently received considerable attention in the treatment of auricular fibrillation^{7 8 9} and hypertonia. Quinidine has been shown to cause a fall in blood pressure when injected intravenously into dogs.¹⁰ McCarrison and Cornwall¹¹ have shown that

all salts of quinine produce a profound fall in blood pressure after intravenous injection in sheep. Finally, Brahmachari¹² has observed a fall in blood pressure following rapid intravenous injection of concentrated solutions of quinine in man in the treatment of malaria.

Our own observations confirm those of Brahmachari. Blood pressure and pulse rate were determined before and at frequent intervals following the intravenous injection of quinine and urea hydrochloride (15 grains in 2 c.c. suspension) in a series of cases under treatment for malaria. It was found that when the time taken for the injection was short, a marked effect upon pulse rate and blood pressure was almost sure to result. Before the syringe was completely emptied, the pulse rate began to pick up. It became rapid and weak and sometimes slightly irregular. The disturbance in heart action seemed to reach its maximum in something less than two minutes. The number of beats per minute sometimes increases to 125 or more. Recovery was usually rapid, the rate coming back to normal in 5 to 15 minutes.

Along with this disturbance in heart action there was a decided drop in blood pressure which was apt to be maintained for some time after the pulse rate had come back to normal. The systolic pressure often dropped 10 to 20 mm. Hg., and the diastolic from 5 to 10 mm. Hg. Maximum effect was usually noted in two to three minutes. It was often an hour or more before the former level was reached.

The following observations are given as illustrative examples:

⁶Editorial, "Recent Tendencies in Chemotherapy," Jour. Am. Med. Assn., 77, Nov. 19, 1921, p. 1658.

⁷Frey, W.: Berl. klin. Wehnschr., 55, 1918, pp. 417-451.

⁸Levy, Robert L.: Jour. Am. Med. Assn., 76, 1921, p. 1289-1293. (See also Editorial, Jour. Am. Med. Assn., 77, 1921, p. 1822.)

⁹Cheinisse, L.: Presse med., Paris, 29, 1921, p. 748.

¹⁰Cohn and Levy: Proc. Soc. Exp. Biol. and Med., 1921, p. 283.

McCarrison and Levy: Proc. Soc. Exp. B

¹¹McCarrison, R. and Cornwall, J. W.: Ind. Jour. Med. Res., (Jan.) 1919, pp. 248-261.

¹²Brahmachari, U. N.: Lancet, II, 1920, pp. 1301-1302.

CASE J. D.

Diagnosis: Malaria, tertian, chronic, and acute. Enlarged spleen.

Sept. 22.—Second injection; given in 15 seconds. Pulse rose from 72 to 92; back to normal in 5 minutes. Blood pressure fell from 100/70 to 92/70; normal reading obtained after 1 1/2 hours.

Sept. 23.—Third injection; given in 15 seconds. Pulse rose from 68 to 92; normal in 5 minutes. Blood pressure fell from 95/65 to 90/60; rose to previous level in 15 minutes.

Sept. 24.—Fourth injection; given in 25 seconds. Pulse rose from 68 to 92; normal in 5 minutes. Blood pressure dropped from 100/65 to 95/65; reached former level in 30 minutes.

Sept. 25.—Fifth injection; given in 10 seconds. Pulse rose from 70 to 100; normal in 5 minutes. Blood pressure fell from 100/70 to 85/65; reached former level in 15 minutes.

CASE B. M'C.

Diagnosis: Malaria, tertian, chronic, and acute. Enlarged spleen.

Sept. 22.—First injection; given in 25 seconds. Pulse rose from 68 to 80. Blood pressure fell from 120/75 to 110/70; back to normal in 1 hour.

Sept. 23.—Second injection; given in 30 seconds. Pulse 88; no acceleration. Blood pressure fell from 120/80 to 110/65; back to normal in 30 minutes.

Sept. 24.—Third injection; given in 15 seconds. Pulse rose from 68 to 92. Blood pressure fell from 110/70 to 100/65; back to normal in 1 hour.

CASE A. B.

Diagnosis: Malaria, tertian, acute. Enlarged spleen.

Sept. 28.—First injection; given in 30 seconds. Pulse rose from 90 to 112. Blood pressure fell from 115/65 to 110/70; back to normal in 5 minutes.

Sept. 29.—Second injection; given in 15 seconds. Pulse rose from 100 to 120. Blood pressure fell from 110/75 to 100/65; back to normal in 5 minutes.

Sept. 30.—Third injection; given in 60 seconds. Pulse rose from 72 to 100. Blood pressure fell from 110/75 to 108/65; back to normal in 5 minutes.

CASE A. R.

Diagnosis: Malaria, aestivo-autumnal, acute. Enlarged spleen.

Sept. 30.—Second injection; given in 60 seconds. Pulse rose from 100 to 140; was recorded at 80 from 5 to 15 minutes after, and rose to 100 again in 30 minutes. Blood pressure fell from 125/75 to 105/75; reached former level in 1 hour.

Experimental and clinical observations thus agree that the rapid intravenous injection of a concentrated solution of quinine may have a pronounced depressing effect upon the circulation. The possibility of producing

this effect upon the patient who is being treated for malaria must be considered carefully. If the patient is already suffering from circulatory embarrassment or the severe hypotonia sometimes associated with chronic aestivo-autumnal infections, the added burden produced by the well-intended therapeutic effort may result in a fatal outcome instead of improvement.

2. *Central nervous system.*—Whether the subjective symptoms of acute cinchonism are to be attributed to a direct action on nervous tissue or are more or less dependent upon circulatory changes is not altogether clear. However, that the drug has an affinity for nervous tissue is demonstrated in its action on the retina (toxic amblyopia), on the auditory ganglia (toxic deafness), and on peripheral nerves (paralysis following intramuscular injections).

Subjective symptoms of acute cinchoism of a more or less severe degree invariably follow intravenous injections of the type described above. The severity of the reaction is in a general way proportional to the speed with which the injection is made, but the well-known factor of individual idiosyncrasy comes into play. In the usual run of cases, the reaction is disagreeable to the patient, but not alarming. Following the emptying of the syringe, he complains of a bitter taste, ringing in his ears, blurring of vision, and a queer, confused, dizzy feeling. In a few cases in which the injection was very rapid, an alarming reaction was observed. Besides the symptoms noted above, the patient broke into a profuse sweat, his pupils became dilated, his expression became fixed and staring, the facial muscles twitched, and a convulsion seemed imminent. The condition, however, usually reached its worst in 3 to 10 minutes and then gradually subsided. It was not unusual, however, for an hour or two to elapse before the patient really "felt himself" again.

Of 11 instances on which notes were made the reaction was practically negligible in 3, moderate in 6, and very severe in 2.

Along with these nervous manifestations attending the rapid injection of concentrated solutions of quinine, which may be extremely disagreeable to the patient, the possibility and danger of encountering a patient with a vio-

lent individual idiosyncrasy to the drug must be constantly borne in mind.

3. *The skin and subcutaneous tissues.*—Attention to the destruction wrought upon the tissues by concentrated solutions of quinine has been brought by a number of observers in discussing the relative advantages by a number of observers in discussing the relative advantages and disadvantages of intramuscular and subcutaneous injections. The subject has been treated experimentally in a very complete way by Dudgeon.¹³ It suffices to say that the necrotizing action of concentrated solutions of quinine upon tissues is comparable to that of salvarsan and all of the precautions guarding against extravasation around the point of injection of the latter drug should be observed in injecting quinine. An accident of this nature is almost sure to be followed by swelling, pain, loss of motion, and, finally, necrosis with sloughing and a resultant wound which is extremely slow to heal. Occasionally thrombosis of a vein and paralysis of a peripheral nerve by direct involvement has been known to occur.

In the series of cases reported by the British War Office (see ref. footnote 3) of 127 injections of quinine bihydrochloride (15 grains) in 8 patients, thrombosis occurred in 4 patients, 2 in both arms and 2 in one arm only. In the small series of cases upon which this report is based, the following four accidents of a similar nature came under observation.

Case No. 9.—Diagnosis: Malaria, simple tertian. Admitted to the hospital in July. Given a series of five intravenous injections. Readmitted to the hospital two months later with a relapse. The patient was found to have an area about 3 inches long and 2 inches wide on the external aspect of his left fore arm, which was anesthetic to epicritic sensation. He stated that this had resulted from the intravenous treatments previously given.

Case No. 2.—Diagnosis: Malaria, simple tertian. Admitted to the hospital in September. A small amount of solution extravasated during the fourth injection. The arm became swollen and painful at the bend of the elbow. Skin did not break down, but normal contour and motion was not restored until several days later.

Case No. 3 (A. R.).—Diagnosis: Malaria, aestivo-autumnal. Admitted to hospital September 22. On October 17 small amount of quinine solution extravasated during injection. Skin and subcutaneous tissues subsequently broke down and

sloughed, leaving a punched-out area the size of a hickory nut, which healed very slowly.

Case No. 13.—Diagnosis: Malaria, simple tertian. Admitted to hospital September 9. Given four intravenous injections and discharged on September 17. Readmitted September 22 with suppurating wounds at the bends of both elbows. These healed very slowly and were not completely closed over when he was discharged on October 15.

Experiences of this sort, which may happen to anyone with ordinary skill in giving extravenuous injections, counsel conservatism in using the method in the usual run of malarial infections.

From the above considerations, it is evident that the method does not always achieve the ideal laid down for chemotherapy of "leaving unscathed the protoplasm of the host."

B. ACTION OF PARASITES

1. *Asexual forms (ring forms) in the peripheral blood.*—The specific action of quinine upon the asexual (ring) forms in the peripheral blood is affected quickly and surely by intravenous administration. Its action in this regard is probably more rapid¹⁴ than when given by either of the other routes—oral or intramuscular.

In the series of cases observed in this study, ring forms were seldom found after the first injection. In only two instances did they persist until after the second has been given. It must be admitted, however, that in an equal number of cases treated by oral administration of 30 grains daily, practically the same result was obtained. The superiority of one method over the other in this regard is therefore not especially notable; but where time is an important factor in instituting the treatment of a given case, the intravenous mode of administration has an obvious advantage. Its efficacy in curing the average acute attack is undoubted.^{15 16 17}

2. *Sexual forms (crescents) in the peripheral blood.*—There still seems to be a reasonable doubt in the mind of most observers

¹³Dudgeon, Leonard S.: Jour. of Hyg., 18, 1919, p. 317.

¹⁴James, S. P.: Trop. Dis. Bull., 13, 1919, p. 92.

¹⁵Patrick, Adam: Jour. R. A. M. C., 32, 1919, pp. 295-301.

¹⁶Pitt, G. Newton: Guys Hosp. Reports, 71, 1921 pp. 21-25.

¹⁷Woodcock, H. M.: Jour. R. A. M. C., 34, 1920 pp. 385-396.

whether quinine has a direct action on crescents. It was not surprising then to find in at least two cases which came under our observation that the intravenous injection of the drug apparently had no more effect upon crescents than did the oral administration.

Case No. 3 (A. R.).—Admitted September 22. Diagnosis: Malaria, aestivo-autumnal. Blood smears showed large numbers of rings and crescents. Given quinine sulphate gr. 30 daily by mouth for one week. Ring forms disappeared on the second day, but the crescents were undiminished in numbers. He was then given a series of seven extravenous injections of quinine and urea hydrochloride, 15 gr. each. Smears still showed large numbers of crescents. Treatment was continued by mouth, 30 grains of the sulphate daily until November 4 (sixth week of treatment), when the first negative smear was obtained. He was discharged on 10 grains daily.

Case No. 12 (J. L.).—Admitted September 13. Diagnosis, Malaria, aestivo-autumnal. Blood smears showed large numbers of rings and crescents. He was given a series of six intravenous injections and was discharged. Took no other treatment. Readmitted to the hospital on October 14 (same year) with a severe relapse, presenting marked gastro-intestinal symptoms. Given four intravenous injections and then the treatment was continued by mouth, 40 grains daily. Crescents were still present on November 1, but a large negative smear was reported on November 5 (end of third week).

From these instances and the literature at present available, it seems reasonable to conclude that the intravenous route of administration in ridding the peripheral blood of crescents.

DISCUSSION

When quinine is given intravenously by routine in the treatment of malaria, as outlined above, it can hardly be claimed that the procedure is without danger of untoward result. The sudden introduction of a concentrated solution into the blood stream tends to cause circulatory depression and distressing nervous phenomena. Whenever accidental extravasation into the tissues at the point of injection occurs, local necrosis and sloughing is apt to result.

To be weighed against these dangers to the patient, is the unquestionable rapidity with which the drug is brought into contact with the parasites in the blood stream. Except with regard to this advantage, viz, the rapidity with which therapeutic control may be

initiated by this route, there is no clear evidence at present that it is more effective in the ordinary run of malarial infections than is mouth administration of the drug in curing the acute attack, in ridding the blood of sexual forms, or in preventing relapse.

Its proper field of usefulness would seem to be upon urgent clinical indications of two sorts. First, it is the method to be used in those cases of malaria in which prompt absorption by the gastro-intestinal tract, following mouth administration, is to be expected, on account of violent gastro-intestinal disturbance or other cause, or in which it is impossible to give the drug by mouth on account of the mental condition of the patient, i. e., delirium, coma, etc. Secondly, it is the method to be used in those cases of malaria which are gravely ill when first seen by the physician and in whom it is deemed imperative to secure immediate cinchonization. It does not seem necessary nor desirable to use the intravenous route of administration in the simple acute or chronic infections ordinarily encountered, whether tertian or aestivo-autumnal, on account of the added risk and discomfort to the patient.

In those cases in which the clinician decides that the use of the method is warranted, the effect of the drug upon the patient must be borne in mind. Particularly is it necessary to be sure that the patient is not suffering from circulatory embarrassment before the injection is undertaken. The technique of the injection must be such as to minimize the danger of untoward effects. This may best be secured by observing three cardinal principles:

A. Careful *aseptic technique*.

B. Giving the drug in moderate doses and *in dilution*.

C. Introducing the solution into the blood stream *slowly*.

It has been demonstrated to our own satisfaction now in a considerable series of cases that when these precautions are observed, the average patient experiences little or no discomfort and there is little, if any, noticeable effect upon the circulation.

All the precautions which are observed in giving a dose of salvarsan should be observed in giving quinine. A sterile filtered solution

of the quinine salt (di-hydrochloride is generally recommended) should be prepared and diluted so that 1 c.c. contains not more than 1-2 grain of the drug. The size of the dose should not exceed 15 grains for a normal adult (see ref. footnote 3). It is advisable to start with a dose of 5 grains and increase to 10 or 12 grains in the subsequent injections. The solution containing the proper amount of the drug may be taken up in a 25 c.c. syringe and injected very slowly at the rate of about 1 c.c. per minute. The injection should be discontinued immediately if there is any suspicion that the solution is not going into the vein properly. Extra care should of course be given in the case of individuals who claim an idiosyncrasy for the drug.

Where there is thought to be danger of circulatory collapse, it is advisable to make frequent readings with the blood pressure apparatus during and for several hours after the injection. The therapeutic action of adrenalin is antagonistic to that of quinine and should be used to combat the depressing effect which the quinine salt may have upon the circulation.*

The intravenous administration of quinine should be discontinued as soon as the clinical indications which rendered the use advisable have subsided and cinchonization continued by mouth administration until the acute attack is relieved. The eight weeks or more of after treatment necessary for sterilization of the patient's blood should allow follow.

CONCLUSION

1. The dangers in the intravenous injection of quinine in the treatment of malaria are: Depression of the circulation; disagreeable and alarming nervous phenomena; and local necrosis and sloughing at the point of injection.

2. No evidence is found to indicate that this route possesses special advantage over ordinary mouth administration of the drug in curing the acute attack or in ridding the blood stream of sexual forms (crescents) except with regard to the speed with which therapeutic control may be initiated.

3. The method should be reserved for those cases with urgent clinical indications or in

which mouth administration of the drug is impracticable for any reason.

4. The untoward effects which may result from intravenous administration of quinine may be largely avoided by rigorously observing certain precautions similar to those found necessary in the injection of such drugs as salvarsan.

WHY WE NEED TO EAT FRUIT

Some people look on fruit as a luxury, but there are very good reasons why we should eat fruit daily. All fruits contain certain salts of organic acids which have a more or less stimulating action on the kidneys, and some of them, such as pears, figs, and prunes, have a laxative effect. In addition to this, fruit furnishes a certain indigestible bulk or roughage which tends to retain water in the intestines and thus helps to regulate bowels.

Children's physicians recommend that all babies of the age of six months should be given small amounts of mild fruit juice or tomato juice daily. This is particularly necessary in the case of infants fed on cow's milk or other prepared milk foods. Unless one of these juices is given, scurvy may develop. The mild form of this disease often passes unrecognized for a time, being noted only in a slowing up of the growth of the child later on.

Fruit is one of the so-called "protective foods," and should be used in some form daily. Fresh fruits, because of their large content of water, are always cooling, refreshing, and appetizing. Fruit which is not thoroughly ripe, or is decomposed should of course not be eaten.

Bananas are a staple fresh fruit, high in fuel value, low in price and easy to prepare. Digestive difficulties usually arise from eating them too green, too fast, or from eating too many. They are most digestible when fully ripe (that is when the skins have darkened, and fruit is soft and yet firm.) They are usually cheaper this way, because the merchant knows they will not keep long afterwards. Bananas baked or stewed and mashed, flavored with lemon and sugar are very palatable. Unripe bananas baked in the skin may take the place of a vegetable in a meal.

Next to bananas, apples are our most abundant market fruit. Their many and varied uses are too well known to require comment.

When we chew fibrous food, such as raw fruit, it is said that we exert a pressure of from 100 to 150 pounds on the teeth. This insures a good circulation of blood, and in children undoubtedly develops teeth and jaws. Raw fruit also leaves the teeth freer from adhering matter than do soft foods. Hence it is wise to end a meal with raw fruit, since it not only acts as a cleaner of the teeth, but it also helps to preserve them by stimulating the secretion of a strongly alkaline saliva which coats the teeth and counteracts the effect of particles of food which would otherwise remain.

A great deal can be said and should be said in favor of the use of dried fruits. These are often badly cooked, and for that reason probably are not as much liked or as commonly used as they should be. Before cooking dried fruits, of course, the water removed in drying should be replaced by soaking the fruits for about 12 hours (usually over night). Cook for a long time very slowly (never boiling). Enough water to cover them well is necessary to make them soft and juicy. No sugar should be added during cooking, but when done, they should be moderately sweetened, and allowed to stand for another 12 or 24 hours in order that they may "plump up" and be well seasoned. The addition of a few slices of lemon while cooking usually gives dried fruit an agreeable flavor.

Endless variety is possible in menus by judiciously combining the more inexpensive dried fruits. Dried peaches stewed with raisins; prunes stewed with apricots; dates baked with dried apples in a pie are attractive combinations.—*New York State Department of Health*.

LEAD POISONING FROM DRINKING "MOONSHINE" WHISKEY

The three cases reported by Warren T. Vaughan, Richmond, Va. (*Journal A. M. A.*, Sept. 16, 1922), are all typical of acute or sub-acute lead poisoning. In all a lead line was

recognized in the gums, and stippled cells were present in the blood. In all three cases careful questioning failed to reveal any source of lead poisoning other than whisky obtained from "moonshine" stills. All three patients had been drinking this whisky to excess, over periods varying from five weeks to three years. Lead was shown by test to be present in relatively large amounts in samples of whisky obtained from each patient. Under appropriate treatment and by the avoidance of further ingestion of suspicious whisky, these patients recovered uneventfully, and have remained well. No other change was made in their occupation or their environment.

MORTALITY OF THE CITY OF NEW YORK DURING 1921, COMPARED WITH THAT OF LARGE CITIES OF EUROPE

A comparison of the death rates for the year 1921, of nineteen of the large cities of Europe with that of the City of New York, shows that 1921 was a phenomenal year as regards the low death rates recorded. Rouen had the highest death rate, 21.88 per 1,000 of the population; Budapest was the next, with a rate of 20.35; then comes a tremendous drop in the rate to that of Vienna, 15.44; Glasgow had a rate of 15.11; Paris, a rate of 14.43; Milan, a rate of 14.39. The German cities showed rather low death rates Bremen, 11.71; Dresden, 12.45; Hamburg, 12.13; Cologne, 13.16; Munich, 13.31. The English cities, Birmingham, London, Bradford, Manchester and Liverpool, showed rates of 11.27, 12.46, 13.81 and 14.27, respectively. New York city was 11.17.—*Bulletin Department of Health, City of New York*, Oct. 21, 1922.

TYPHOID VACCINATION BY MOUTH

Besredka has proposed vaccination against typhoid by mouth. His vaccine consists of a pill of bile and a tablet containing a mixture of heat-killed typhoid and paratyphoid bacilli. These are taken three mornings in succession. It is for the future to determine whether or not the method has value.—*Journal A. M. A.*, Oct. 21, 1922, p. 1446.

BOOKS RECEIVED

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. By J. J. Macleod, M.B., Professor of Physiology in the University of Toronto, Toronto, Canada; formerly Professor of Physiology in the Western Reserve University, Cleveland, Ohio. Assisted by Roy G. Pearce, A. C. Redfield and N. B. Taylor and by others. Fourth edition, 992 pages, with 243 illustrations, including 9 plates in colors. St. Louis. C. V. Mosley Company. 1922. Price, \$11.00.

It is not strange that this remarkable book has reached a fourth edition in so brief a period, and the author has taken advantage of this to incorporate the new material available, which is best set forth by quoting a few lines from the preface to this last edition: "Certain chapters have been rewritten, such as those on the output of the heart, the conditions causing alterations in the acid base equilibrium of the blood, the normal electrocardiogram and the movements and emptying of the stomach. Considerable alterations have also been made in portions of other chapters so as to permit of the incorporation of the recent work on intracardiac pressure, the capillary circulation, the mechanism of adaptation to mountain sickness, pancreatic diabetes, etc."

In this book the *science* of medicine gives in greater measure the aid it should to the *art* of medicine than in any other work coming under the observation of this department.

The "Crowning Edition" of the "BOOK ON THE PHYSICIAN HIMSELF," by Dr. D. W. Cathell, of Baltimore, has reached this Journal.

This is a volume of 359 interesting pages and is an enlargement of a small work by the same author appearing first about thirty-five years ago under the title of "The Physician Himself."

The work is most remarkable in its **subject matter**, but still more noteworthy when it is recalled that it is the product of a man in his eighty-third year.

Its dedication tells the story—"To each and every follower of Aesculapius who believes that however much we know something lies beyond." This book does not pretend to carry a lesson either in anatomy or any other older or newer branches taught in any medical school. It does, however, carry a very absorbing lesson on a very large number of subjects upon which most medical students have rarely heard one word. The subjects treated of in this book can be found nowhere else and are the subjects most vital to every young practitioner and never cease to appeal to and interest the older ones.

It takes up the young practitioner as he starts;

his location; his office; his office equipment; his professional conduct; his social relations; his relations and behavior to his patients; and how to get a practice.

It asks and answers a flood of questions as how best to secure and maintain the respect and confidence of the community and vividly lights the rocks upon which many professional careers go aground.

It points out clearly the road to follow on the subject of professional economies. It teaches how to put a value on professional services, both by the practitioner and the public and it points out to the practitioner how great economic losses can be minimized. The subject matter on this topic is worth hundreds of times the price of the book.

Running through the entire book is a tone of high character and upright conduct that can but make every man a better man for reading it.

S. S. C.

THE PRACTICAL MEDICINE SERIES, 1922—

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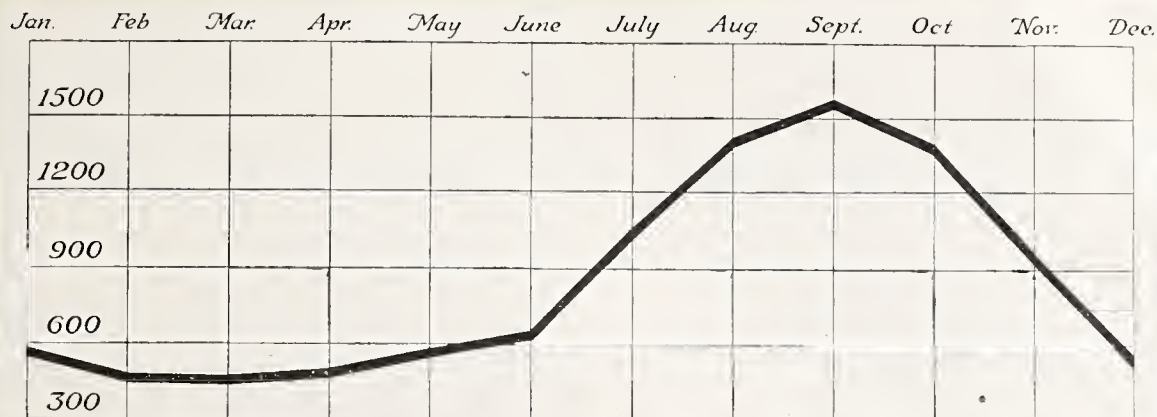
These books are made to save the physician time and search through the literature to find the salient facts of new knowledge. This is done for him by specialists of reputation; and the progress that is of real value—sifted, appraised and annotated with editorial comments and suggestions—is presented in a brief but comprehensive survey covering every subject that comes within his professional work.

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THE YEAR BOOK PUBLISHERS,
304 South Dearborn Street, Chicago.

APPLIED CHEMISTRY. AN ELEMENTARY TEXTBOOK FOR SECONDARY SCHOOLS. By Fredus N. Peters, Ph.D. 416 pages, illustrated, price \$3.00. St. Louis, C. V. Mosby Company, 1922.

This Peter's new work on Applied Chemistry was written primarily for use in colleges, but should prove of interest to physicians who wish an elementary yet complete work on general chemistry. Most works on chemistry are written in an uninteresting manner and give a mere skeleton of the subject, but Peters is written like a novel and thus makes the subject interesting reading.



Typical Yearly Curve for Deaths From Typhoid Fever in the United States

If typhoid immunization were given by every physician to just his regular patients this high death rate for the month of September would never occur. Swan-Myers "T-A-B" Bacterin No. 42 is made from the identical strains and by the same methods as is the vaccine used in the U. S. Army and Navy. It is carefully standardized as to potency, sterility and freedom from toxicity. Always obtainable from druggists and supply houses. Individual package (1 complete immunization) \$0.75, Hospital package (12 complete immunizations) \$5.00

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Protein	.	.	.	2.28
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Salts	.	.	.	.58
Water	.	.	.	90.06
				<u>100.00</u>

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1922-1923.

Next Annual Session to be held at Nashville,
April 10, 11, 12, 1923.

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HEART DISEASE FROM THE STANDPOINT OF PREVENTION*

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IN Medical Associations it is quite in accord with custom, in the matter of Presidential Addresses, for the speaker to review the remote or recent accomplishments of our profession, dwelling with especial pride—as indeed we have a right—on those wonderful discoveries of recent years, the rational exploitation of which have wrought such immeasurable benefits to mankind. Both in surgery and in medicine, the decades within the actual observation of some of us have witnessed a progress that begets pride. The conquest of yellow fever is an accomplished fact. The way to a conquest of malaria is all but made plain to us, had we but the courage to put into execution the scientific measures suggested. The Great White Plague is no longer the plague it was, and, monster that is it, it is steadily retreating before an attack whose chief weapon is not drugs, nor even tuberculin, but sane living—a serious use of the measures that have been known for ages as of real value in tuberculosis; viz, good food and fresh air—nature's own wholesome remedies.

I might elaborate on these and many other features of our professional work of recent date, but I prefer to call attention to an interesting field in medicine in which preventive measures have but just begun to attract

attention here and there, though the importance of the problem has long been known to all practitioners. I refer to organic disease of the heart.

The prevalence of heart disease as a factor in disability and in death has been borne in upon us in the last ten years by certain statistical studies, notably those published by Mr. Frederick L. Hoffman of the Prudential Life Insurance Company. The rather careful examination of over three million men in the United States of the draft age made further interesting disclosure of the prevalence of cardiopathy among our young male adults. And while it is no doubt true that many a prospective soldier was turned back to civil life through a mistaken meaning of murmurs and other phenomena—yet, on the whole, the figures given out probably approximate rather closely the actual number of genuinely crippled hearts. These publications—discoveries in a sense—have added impetus to the effort already organized, and put into activity in some localities—to seek out cardiopaths and potential cardiopaths with diligence and to formulate some plan whereby heart trouble could be prevented or modified and to dislodge it from its all too commanding position as a cause of death or disability.

Examinations under the Draft Law (age 21-31) resulted in rejection of three per cent for organic disease of the heart—a total of

*Presidential address, delivered before the Middle Tennessee Medical Association, Murfreesboro, November 9-10, 1922.

approximately 100,000 young men. Rejections at Purdential Life Insurance Company examinations—extending, of course, over a wider range of years, was, for a term of years, approximately twenty-five per cent—a very high percentage when we bear in mind that the more obvious cardiac sufferers will not apply for insurance. Recent statistics for children of school age are furnished in a paper by Dr. Halsey of New York, in which he reports 228 cases of organic heart disease in 44,000 children of the lower East Side—much less than one per cent. This occurs to me as being a low per cent, and is a reason for feeling that there is less prevalence now of the rheumatic infections.

When we look at statistics dealing with heart disease as a cause of death, we find that in the Registration Area of the United States, the rate per 100,000 of population from all forms of heart disease has risen from 131 in 1900 to 169 in 1918. In the same statistics it appears that deaths from pericarditis have fallen fifty per cent and from acute endocarditis, thirty per cent. The bulk of the increase has evidently been due to the luetic and the degenerative types of heart disease.

Apart from an interest in preventive medicine in all its bearings, nothing has contributed so much in the matter of heart disease, as the serious effort to classify its causes. The relation of the so-called rheumatic infections to cardiopathy has long been known and recent studies have only verified and fixed professional opinion of many decades and recent preventive measures have made definite progress in corroborating this conception of etiology. As soon as we have evolved a rational working classification of the etiology of any disease, it is but a step to begin to devise means of prevention or modification.

I think most of us work on a classification first urged, so far as I know, by Dr. Cabot, though the principal points in his classification have long been known and acted on.

He classifies heart disease as follows:

(1) The so-called rheumatic or streptococcus group; having in mind that strain of streptococcus that gives us the so-called acute

rheumatic fever, attacks of myositis, chorea, and all having a more or less definite association with tonsillitis. Personally, I quite accept the recognition of this streptococcus as an organism of very near specificity—knowing its own mind and pursuing its own varied attack, and having only a kind of kinship with others of the same family name whose range of action is all the way from low grade chronic arthritis to intense and fatal septicemia, with or without—usually without—any special cardiac attack.

I take it that it is not necessary to dwell at any length on the relation that exists between acute rheumatic fever and endocarditis—and with the endocarditis, there is commonly a myocarditis and often a pericarditis. While some do not accept acute rheumatic fever as a specific disease, readily differentiated from other forms of acute arthritis and of chronic arthritis, they do acknowledge the fact that the more nearly an arthritis conforms to the type stressed by Osler and also by McCrae, the more likely it is that disease of the heart may accompany or follow the attack. Furthermore, while we accept a close relation between sore throat and polyarthritis of this type, we realize that unless a sore throat is accompanied by an arthritis, or a myositis or a chorea, there is not the same probability that a cardiac involvement will develop. All of which is to affirm that there is a streptococcus of low grade virulence probably entering the blood current by way of the tonsils and setting up an attack on the joints, the endocardium, the pericardium, heart muscles and certain other muscles and tendon sheaths and the brain. This organism attacks chiefly children and young adults, rather rarely those of over forty-five, and in the young is more likely to attack the heart than in those of more years. How large a percentage of cardiopaths in a community at any one time owe their sad estate to this streptococcus varies much. There is no doubt that this type of heart disease is more common in the British Isles than in this country.

According to Dr. Cabot, of 600 clinical cases studied in the Massachusetts General Hospital between 1910 and 1914, forty-six per

cent were in this streptococic or rheumatic group. Of 216 autopsied cases at a somewhat earlier date, forty-two per cent were of this origin. These cases were cardiopathies of all ages. Of a similar number under forty years of age, a much larger per cent would be of this nature.

The second group is the syphilitic group—twelve per cent of the 600 clinical cases.

The third is the so-called arteriosclerotic group—thirteen per cent.

The fourth is the nephritic—nineteen per cent.

Besides these groups comprising probably ninety per cent of all cardiopathies in a mixed clinic, there is an eight or ten per cent group of varied etiology, some of them of thyroid origin. In another article, 1913, Dr. Cabot found only five per cent to be of luetic origin—a figure that appears to me to be nearer an average finding. The syphilitic group should include only those of positive luetic history or positive Wassermann, and with strong local evidences of being due to the treponema—such as the presence of an aortitis, an aneurism, or an aortic valvular lesion that gives every evidence of not being of rheumatic origin. Most of these are in men of middle life.

The arteriosclerotic group includes those heart cases occurring in middle or late life in which, besides the absence of rheumatic and possibly syphilitic infection, there is definite evidence of a localized or generalized arteriosclerosis. These commonly have high blood pressure and a large heart, palpably sclerosed vessels, often, and, sooner or later, by virtue of impaired nutrition of the heart muscle other symptoms ensue. These cases may or may not show some urinary changes. They remain essentially not nephritis, but vascular diseases and the heart happens to be the organ most seriously impaired.

The nephritic group comprises those cases that can satisfactorily be considered as sequelae to a nephritis. In practice it will often be difficult to say whether an individual case is primarily a nephritic, an arteriosclerotic or possibly even a rheumatic type of heart disease with loss of compensation. If a complete history is available the diagnosis is much more easy. How much the cardiac in-

volvement may be due to the poison of nephritis, how much to the attendant high pressure may be impossible to estimate. It is a clinical fact that given a nephritis we are prepared for a heart trouble as a sequel, and rather frequently death may ensue from the heart angle rather than that of uraemic poison.

Assuming, then, that the causes of disease of the heart as stated are the real causes, and in the present state of medicine, they seem to be the real causes—what duties devolve upon the practitioner? What can he do? And that the family physician, not the health officer or other public agency, must look after this problem is apparent to everybody. That public agencies are doing something in the second group—the syphilitic—is true, but even in this, the patient's personal physician is the one that must stand between him and his prospective aortic disease—must prevent death or invalidism from the heart angle. Periodic examination of school children is another field in which public agencies are doing a good work to the rheumatic group.

Turning first to the streptococcus or rheumatic group, I believe we are already making progress toward prevention of this variety of heart disease. The recognition of the tonsils as a port of entry of this organism has suggested a means of prevention that I believe has already cut down the incidence of acute rheumatic fever and chorea. By the same token the removal of diseased tonsils has prevented the endocarditis that would have ensued in the wake of these diseases. Further it has become an accepted dictum than any patient that has had an attack of rheumatic fever should have a tonsillectomy within a reasonable time after the subsidence of the acute arthritis. The same applies to chorea, well defined myositis and pericarditis—all conceived to be of similar bacteriology, and in younger children, at least, closely associated with tonsillar infection, or rather owing their development to the acquisition of bacteria by way of the tonsils. Dr. St. Lawrence of New York studied for three and one-half years a group of ninety-four children in a children's cardiac clinic, the children ranging

from four to sixteen years. Fifty-eight children had definite cardiac involvement. Thirty-six cases were potential heart cases in that they had been victims of rheumatic fever, acute myositis or chorea. Eighty-five children had a complete tonsillectomy before the three and one-half-year period of observation. Of these forty-five children had had rheumatic manifestations without chorea. Seven of these had recurrences after tonsillectomy—certainly a much smaller per cent than usually shows a recurrence in that period. In forty cases that had chorea, fifty per cent had recurrences. Of fifty-eight cases of organic heart disease in twelve of whom there had been cardiac failure, only one attack of cardiac failure occurred in the period of observation.

In older children and adults, the teeth as sources of arthritis and no doubt of endocarditis and myocarditis as well, come into greater etiological prominence and in every cardiopath of this type, and every potential cardiopath, the teeth should have the same attention as the tonsils. All acute infections are subject to variations in their incidence in a community and probably rheumatism is no exception, but I do believe that proper attention to teeth, but especially to tonsils will go far to reduce the prevalence of these infections.

It is proper then for the family physician to pay attention to all symptoms of children, such as growing pains, muscle pains, slight joint involvement and care for them in the light of a more serious pathology in a vital organ. Apart from measures to ward off a recurrence of infection, there is a further obligation on the physician so to direct the child with heart disease as to magnify his chance to be fit for the duties of life, and postpone or completely avert a breakdown. Superintendence as to diet, sleep, play, and work requires tact and patience, but the result is worth the effort. The selection of a profession or vocation fitted to the physical powers of the invalid can also be done. In New York there is a special school in the public school system for the children with crippled hearts. Cardiac clinics have been established in a number of cities. These clinics have not only been of great help to the in-

dividual cardiopath, young and older, in preventing breakdowns, but they have actually added to the productive capacity of the patients by securing for them work commensurate with their physical endurance. In a small community such work must be done by the personal physician, but in larger centers, cardiac clinics should be organized, and with the help of social workers much good can be done.

We have parted considerably with the gloomy view we once held about the prognosis in children suffering with mitral disease, even mitral stenosis. And as a result we are willing to labor more assiduously toward averting an early tragedy, and at times seem to effect a cure.

As to heart disease from the other three prominent causes, we acknowledge that when once developed there is no cure, or near cure, but much can be done to halt the downward progress. Change of work, fewer hours of work per day, cultivation of mental poise, elimination of worries as far as possible, dietary corrections, in fact a large group of hygienic measures are at command, and if properly applied from the early days of trouble and checked by repeated examinations could no doubt add fifty per cent or more to the individual's days of working capacity—a goal not unworthy of our best efforts. And whatever shall have been gained will be very largely to the credit of practicing physicians for it will have been their work.

While heart disease, viewed, of course, in its broad sense—including not only myocarditis and aortic valvular and coronary disease, but also including aneurysm is due to syphilis in only some twelve per cent or less of the cases, it constitutes a form of that trouble in which much can be done in a preventive way—though very little can be done in a therapeutic way when once developed. That is, a well treated case of lues with modern methods and modern tests is not likely to develop an arteritis or valvulitis. Many things have contributed to a more thorough treatment of syphilis—of which salvarsan and its modifications probably are not the chief. If we had no method of checking up on the results of treatment other than those in vogue

two decades ago, I doubt whether we should be getting so very much farther than we formerly did. But the laboratory is here as a more or less satisfactory guide to the effects of our therapeutics. This includes of course testing the spinal fluid. Diffusion of knowledge, even to the laity, that syphilis is so often a fatal disease by virtue of its attack on the arteries and the parenchyma of the nervous system, has stimulated both doctor and patient to a much more thorough treatment. Probably I should not be far wrong in saying that a well treated case of syphilis, properly checked up in a laboratory ought not to develop a cardiovascular pathology. Incidentally it is true that any physician who treats syphilis should be familiar with the symptoms and physical signs of aortitis, and also those of the ordinary manifestation of syphilis of the nervous system. The work of the state and federal government agencies in the matter of venereal diseases will go a long way toward preventing the cardiac developments in lues if the profession will collaborate in a sympathetic way. But still the personal individual element is the great one. If the practitioner is not alert and persistent in treatment, the cardiac complications will obtain as heretofore.

The prevention of heart complications of nephritic origin is commensurate with our ability to prevent nephritis and to treat nephritis. I shall not dwell on either of these points except to say that we are woefully unprepared either to prevent or satisfactorily to treat this very common disease. Sensible living, in its broadest sense, will come about as near being both a preventive and a treatment as more elaborate lines of procedure.

The same may be said of the cases of heart

disease growing out of generalized or localized arterial disease. Whatever hygienic measures will serve to prevent essential high blood pressure will *ispro facto* relieve a strain upon a heart probably itself supplied by sclerosed vessels. Whatever will tend to prevent disease of the coronary arteries separately, or as a part of general arterial disease will tend to save the heart. In a sense this is the same as deferring old age. Arterial change comes with years, as snow comes with winter. In a sense it is old age, coming in some, of course, sooner than in others. It comes not so much by the sweat that gathers on the brow of toil as by the worry and strain that are hidden beneath the brow of those that work more with the brain than with the muscles. If mankind will learn to work well, play well and sleep well—and do these not only in due proportion but joyously—a larger percentage would live to drift out by a process of general decay or be carried off by the old man's friend pneumonia, and a smaller proportion than now would leap into the great beyond in the sixth decade or in the fifth decade.

I do not hold out that putting these thoughts into professional practice would startle the world as has the conquest of yellow fever, the cholera, and smallpox, but the result will gradually show in our vital statistics and in the lack of morbidity and invalidism among the people. And all the more to the credit of the practicing physician, because it will have been his work, and one effected by the sympathetic and persistent application of a few facts, but none the less a triumph of science and a triumph of that spirit in our profession that exalts the prevention of disease to a higher position than its cure.

DIAGNOSIS OF EARLY PULMONARY TUBERCULOSIS*

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FAULTURE to diagnose tuberculosis in its early stage is the factor which tends more than any other one to defeat the cure of the disease, and this same factor, by permitting the disease to progress and reach the open stage before it is recognized, subjects needless numbers to the dangers of infection. Specialization in the various branches of medicine has, as a matter of course, extended its hold upon the tuberculosis field, and the general practitioner has been the object of much criticism by some physicians who are confining their entire time to the study of this problem. When we consider the fact that seventy-eight per cent of all the patients admitted to tuberculosis hospitals in the past ten years have been classified as advanced cases we can not help from feeling that the general practitioner deserves at least a portion of this criticism.

As Laennec stated nearly one hundred years ago it appears that hardly any consumptive succumbs to the first attack of tuberculosis, and that in the vast majority of cases the first attack is erroneously "diagnosed" as a mild respiratory trouble. Some confusion is caused in the minds of the laity, as well as of physicians, who assume that the disease is incipient only for a short time and then progresses to the moderately advanced or far advanced stage. This assumption is wrong. There are cases which pass the early stage soon after active symptoms manifest themselves, while others, with a small amount of involvement may remain active for a number of years and never pass beyond the stage of incipency. By an early or incipient pulmonary tuberculosis we mean a limited and circumscribed lesion in the form of infiltration, limited to the apex or a small part of one lobe. No tuberculosis complications. Slight or no constitutional symptoms (especially including gastric or intestinal disturbances or

rapid loss of weight.) There may be slight or no elevation of temperature nor acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration may be small in amount or absent and there may be no cough. Tubercle bacilli present or absent.

There is no positive standard that can be established which will cover the diagnosis of tuberculosis in every case. Errors in diagnosis are due to lack of care and thoroughness, inclination to wait for a positive sputum, failure to utilize the x-ray, and, above all, lack of an accurate conception of existing pathology and failure to correlate the history and clinical findings.

The following factors are to be considered in every suspicious case:

1. Family History.
 - (a) Intimate exposure to infection, especially if prolonged.
2. Personal history including
 - (a) Losses in weight.
 - (b) Winter colds.
 - (c) Ease of fatigue.
 - (d) Hemorrhage from lungs or blood stained effusion.
 - (e) Plenrisy with effusion.
 - (f) Pneumonia.
 - (g) Influenza.
 - (h) Unexplained fever, "malaria."
 - (i) Cough, especially early morning.
 - (j) Expectoration.
3. Examination including
 - (a) Physical.
 - (b) X-ray.
 - (c) Tuberculin test.
 - (d) Daily temperature record.
 - (e) Sputum examination (last and least).

History—A complete history is very helpful and, in some cases, absolutely necessary. From a careful review of the literature and clinical analysis on tuberculosis we are justified in the opinion that childhood infection is almost

*Read before the Middle Tennessee Medical Association at Murfreesboro, November 9-10, 1922.

universal, that practically all infections occur before fifteen years of age, and that pulmonary tuberculosis is but an expression or exhibition of acquired relative immunity due to infection received during childhood. Some recent writers go so far as to contend that the primary infection, as a rule, occurs under the sixth year of life. Considering these facts, we should take ample time to obtain a complete history in every case. Tuberculosis occurring within the family where there is no history of direct contact is of little importance. Prolonged or repeated contact within the family or elsewhere is of great importance and must not be overlooked. The history of open tuberculosis in the family, especially if the patient under examination was offered opportunity for intimate and prolonged contact during early childhood, is very important and demands that we obtain information as to how long such association has existed and at what period of life it occurred. The cause of death of patient's grandparents, parents, brothers, sisters, and husband or wife is important. In this respect one should remember that the "chronic bronchitis" and the so-called "stomach cough" with which so many ancestors suffered was practically always tuberculosis, and, that inherited weakness of the pulmonary tissues is, in the majority of cases, a reality. A history of tuberculosis or chronic respiratory troubles in the patient's family is the first link in the chain of evidence. In other words do not accept the patient's statement that there has been no tuberculosis in the family as final proof that the family history is negative. A carefully taken history is just as important as the physical examination of the chest and it requires much skill and judgment to select the essentials and even more to discard the valueless items that may be obtained in taking the patient's history. Brown gives us a rule to follow in the diagnosis of pulmonary tuberculosis in its earliest stages: "Believe a man with a suggestive history actively tuberculous until through the investigation of every symptom, and by the use of every diagnostic means, he has been proved not to have it."

Personal history and symptoms are even more important than the family history.

Time consumed carefully and fully to obtain the history will usually result in eliciting enough symptoms to point definitely to a pulmonary tuberculosis and make such a diagnosis a probability. Inquire into the patient's health during early life. Ascertain if patient has been susceptible to colds and influenza; if he has had pneumonia or pleurisy; if his present indisposition followed an acute illness, such as measles, pneumonia, pleurisy, whooping-cough, influenza, etc. Is he weak? Is he tired, especially upon arising in the morning or after exercise? Does he have a delicate hacking cough and is this more noticeable in the early morning? Ask the patient when he last felt perfectly well, rather than when his indisposition began. Is there any rise of temperature during the twenty-four hours? If in doubt, have patient's temperature taken, together with pulse, twice daily over a period of one week. Hawes emphasizes the fact that constantly subnormal temperature combined with a rapid pulse or a subnormal morning temperature with a persistent though slight rise of four-tenths or more, sometimes during the twenty-four hours, is very suggestive of tuberculosis, especially if accompanied by rapid pulse. Also remember that an idiopathic pleurisy is almost always tuberculosis and that a morning cough accompanied by slight amount of blood streaked, or colored sputum, especially if recurring for a few days, is generally always significant of tuberculosis. Pottenger states that "bleeding from the throat is a term which is frequently employed in comforting and lulling the patient, who is suffering from early clinical tuberculosis, into false security and is the sedative which throws many people off their guard and allows an early tuberculosis to creep on to an advanced hopeless condition."

Slight hoarseness due to relaxation of the vocal cords and not to any tuberculosis condition is not uncommon and is often an early symptom.

Examination—The time-honored methods of inspection, palpation, percussion, and auscultation are the most reliable means by which we may proceed in order to correlate our evidence in all physical examinations of the

chest. The results obtained by these methods should be checked up by the x-ray. All of these methods are important and should be carried out systematically in every examination. None of these methods will yield the plain and unmistakable signs in the early case that they yield in the advanced case but the evidence that each method yields should be linked in the final chain of facts on which the diagnosis is based.

Inspection is a most important but neglected method of diagnosis which, when used, may yield much valuable information. Degenerative changes in the muscles and subcutaneous tissue are not marked in early pulmonary tuberculosis but the low grade of inflammation that results from infection and activity will produce a lagging, holding and rigidity of the muscles over the involved area.

Practically all clinicians agree that the earliest physical signs of tuberculosis involvement are found over the upper portion of the lungs, and more frequently at the right apex than the left. Fishberg contends that changes in resonance and breath-sounds, elicited over a limited area of the chest, if found anywhere below the third rib anteriorly or the fifth dorsal sine posteriorly, are not of tuberculosis origin, providing there are negative findings in the apices.

Percussion may or may not give us evidence of value from the fact that there is rarely any *real* dullness in an early process, but only a slightly diminished resonance, a shortening of the note, higher pitch and feeling of resistance under the finger. We should remember that normally, percussion elicits a dull note over the right apex, the second intercostal space on the right side, the intrascapular spaces, between the seventh cervical and fourth dorsal vertebrae, and over the deep area of the heart.

Shattuck, in a careful study of the variations of the normal pulmonary resonance, found that dullness at the right apex in front frequently extends below the clavicle to the second rib, and that slight relative dullness of the left apex, posteriorly, frequently exists.

No physical signs are pronounced in early pulmonary tuberculosis. With a small in-

filtration limited to the right apex the normal dull note becomes duller but not flat. When infiltration of the left apex occurs the normal resonant note becomes dull. If percussion over the left apex elicits dullness equal to the normal dull note over the right apex the left apex is the seat of infiltration.

Many workers agree that auscultation is by far the most important method in the physical diagnosis of pulmonary tuberculosis. In this method of examination we must always remember that, normally, broncho-vesicular breathing is heard over the right apex, over the second intercostal spaces close to the sternum and over the interscapular spaces. Bronchial breathing is normal over the trachea and larynx and vesicular breathing is normal over all other portions of the lungs. When infiltration occurs in the pulmonary areas over which vesicular breathing is normal, the normal vesicular murmur changes to broncho-vesicular. When the infiltration is present in those parts of the lungs in which broncho-vesicular breathing is normal, the murmur changes to bronchial and expiration is of longer duration than inspiration. Broncho vesicular breathing over the right apex is normal and the same breathing over the left apex denotes infiltration.

The first rales which make their appearance are those which accompany infiltration, the so called crackle or crepitant rales. At this time there is very little exudation into the tissues surrounding the tubercle, such exudation being confined to the smaller air spaces causing fine crepitations. A single rale or many rales, if persistent and located above the level of the second rib and third vertebral spine—whether they be moist, dry, crackling, crepitant, or other variety—may be considered as the earliest evidence obtainable by physical examination in the diagnosis of pulmonary tuberculosis. Of course other conditions may produce rales in this portion of the lung but persistent rales in this location are more frequently due to a tuberculosis process than to other conditions. Failure to detect the rales which indicate infiltration is more often due to faulty technic than to other causes. Numerous coarse rales can be heard during normal respiration but when this oc-

curs the disease has always passed the early stage. A few fine or moderately coarse rales can only be heard after cough. The patient is instructed to breathe out slowly about one-half of the air in his lungs and then to cough and immediately to take a fairly full, fairly rapid inspiration. A single rale elicited by this method and persisting on repeated examination should lead us to investigation by other methods. Rales at an apex should be considered as due to a tuberculous infiltration until proved otherwise, while those at a base should be held as due to nontuberculous conditions until proved to be tuberculous or until an old lesion is found at the apex.

X-ray examination, to be of any value, should be conducted and the findings interpreted by physicians who have had considerable experience in such work. My experience in admitting three hundred patients to an institution has convinced me that a carefully taken and carefully interpreted x-ray plate may reveal slight or extensive pulmonary tuberculosis which may escape detection by the ordinary methods of examination. In any case with a suspicious history, pulmonary tuberculosis should never be excluded until the patient is given advantage of this method of examination. In many cases the x-ray is capable of revealing structural changes before the appearance of any physical signs, and in practically all cases, these plates show changes much greater in extent than the physical signs indicate.

There was a time when much faith rested upon the outcome of the tuberculin test. At the present time, however, this test is not considered very valuable except in the diagnosis of childhood tuberculosis. Tuberculin carefully used in proper doses, is free from danger and may be of slight value in determining the presence of an infection. A negative result, instead of proving that there is no tuberculosis, is more likely to mean that the patient has established some degree of immunity and no longer reacts to that particular dose of tuberculin. A positive reaction usually means that tuberculosis is present somewhere in the body but it does not indicate that the process is active. Brown summarizes the opinion of diagnosticians in the following

words: "No modification of the tuberculin test as yet devised, differentiates clearly clinical tuberculosis that demands vigorous treatment from non-clinical tuberculosis that requires only a God-fearing life."

The finding of tubercle bacilli in the sputum is considered as absolute proof of an active tuberculous process. A negative sputum or even repeated negative examination does not rule out tuberculosis. Frequently there is no sputum in the early case just as there may be no cough. Many workers have observed that tubercle bacilli are not found in the early stage in more than twenty per cent of the cases and that active tuberculosis may be present for months without the appearance of bacilli in the sputum. Trudeau, in his analysis of one thousand consecutive admissions, including patients in all stages of the disease, reports a positive sputum in only fifty-three per cent of the cases. The presence of bacilli in the sputum always indicates destructive changes in the pulmonary tissue and, as a rule, signifies that the disease is in the moderately advanced or advanced stage. Sputum examinations should always be made and repeatedly made but we should get away from the present tendency to rely on this test as the only means of detecting early pulmonary tuberculosis when the symptoms are very suggestive and there is history of repeated contact.

A combination of both physical signs and symptoms, even though both may be slight, is the surest guide to a correct diagnosis. Considering the many facts which may be obtained from a carefully taken history and a thorough examination, the following facts point definitely to a diagnosis of pulmonary tuberculosis:

1. Tubercle Bacilli.
2. Hemoptysis.
3. Pleurisy with effusion.
4. Crepitant or moderately coarse rales at the apex following "expiration" cough.
5. Lesion at apex demonstrated by x-ray.
6. History of prolonged and repeated contact during childhood.

Finding tubercle bacilli in the sputum is absolute proof of an active tuberculous pro-

cess but unfortunately the test is negative in eighty per cent of our early cases. Hemoptysis and pleurisy with effusion point us to a diagnosis in ninety-five per cent of the cases. Demonstrating a lesion at the apex by means of the x-ray or by the stethoscope and supporting or supplementing this evidence with other suggestive symptoms, such as a constantly subnormal or slight afternoon temperature with rapid pulse, will justify a diagnosis of tuberculosis.

In conclusion let us not forget that thousands of cases of tuberculosis are being allowed to pass to a hopeless stage before the

disease is recognized and in the majority of cases this is from the fact that physicians fail to make a careful study of the patient, his history, his constitutional signs and symptoms, and do not utilize all the methods at hand that may assist in arriving at a diagnosis. The physician who waits for the plain and unmistakable signs of tuberculosis (cough, night sweats, high temperature, marked emaciation, positive sputum and marked physical signs) is sure to make more mistakes than the man who studies the history carefully, uses the microscope and stethoscope less and uses the thermometer and "horse sense" more.

THE DIAGNOSIS OF EXTRA-UTERINE PREGNANCY*

J. A. CRISLER, M.D., MEMPHIS.

WHEN I chose this subject upon which to write a paper for this association, I was wholly actuated by the thought of the tremendous importance the subject presents in relation to both the patient and physician.

When I began to rehearse some of the recent literature on the subject and compared it with the older editions of our text books on gynecology, I was overwhelmed with the conclusion that I could write anything worth while pertaining to the matter, in a fifteen minute paper, if indeed I could do so at all in a many paged volume.

It is a fact that the most highly trained gynecological observers are at variance with each other upon many of the so-called cardinal points. Therefore it cannot be expected that the practitioners of medicine, who usually see these cases first, will ever be able to make a correct diagnosis, if the symptomatology of the case varies in the slightest degree from the old beaten path, which it frequently does. By the expression beaten path, I mean that syndrome of symptoms set forth by the older

writers as necessary to harmonize with a case of *extra-uterine pregnancy*. This syndrome would be as follows:

Given a woman, say, 35 years of age who has been married fifteen years, who had had one child ten years ago or no children as the case might be, whose menstruation had never been erratic, she suddenly misses her period for several days or a week or more and after her period becomes established, accompanied by more pain than usual, she passes definite shreds of membrane or a partly organized decidua, after which there is a cessation of menstrual flow, followed again in a few days by a slight flow of blood and this process continues throughout a variable period until suddenly while sweeping or doing some other household duty, falls in a faint and is placed in bed by tender hands and the doctor is summoned and he finds the patient pallid, sweating and weak with a lowered blood pressure and an anxious expression, with a rapidly forming tumor mass in the lower abdomen, etc. Here a positive diagnosis was possible. Let us be reminded, however, that this sequence does not occur in much over 10 per cent of the cases that nowadays come

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under our observation. The other 90 per cent must be guessed at by the rank and file of physicians and surgeons, as it is hardly thinkable that anything approaching a diagnosis will be made. Therefore, the patient is fortunate if we even suspect the condition and this suspicion keeps us away from the curette or other harmful meddlesome attempts at relief.

We will have taken a long step forward if we bring ourselves to believe that there are no definite symptoms alone by which we can be guided to a correct diagnosis and in spite of all the means at our command, we will for the present at least, suffer much humiliation in the thought that we will do well to diagnose 25 per cent of these cases correctly.

Most of the recent men, too numerous to mention, who have written capably upon the subject, lay stress upon certain signs and symptoms that have struck them most forcibly from the standpoint of their individual experiences. Unfortunately these have not been correlated into a definite and standardized system of sufficient clearness and simplicity to be useful, except to a certain class of highly trained gynecological observers.

I will hazard a few points for your consideration, taken from my own experience, which will be useful, provided the next case you see will present similar symptoms, which again is not likely.

1. Menorrhagia in women whose previous menstruation history has been normal. The bleeding commencing at about the time of the normal menstruation and continuing indefinitely.

2. A soft cervix very similar to the cervix felt in uterine pregnancy. It is likely that when the uterine bleeding has begun, that prior to or concurrent with this, there has been either a partial or a complete tubal rupture in cases of tubal pregnancy or a rupture of the sac in rare cases of ovarian pregnancy. The blood that is spilled in the peritoneal cavity very soon creates a mild, local peritonitis; then we will have a slight leucocytosis and generally a slight rise of temperature. When this occurs a vaginal examination will generally elicit great tenderness in the post uterine areas. About this stage

of the process, the patient will complain of painful defecation and generally frequent urination. However, it must be remembered that pain and shock are not necessarily present in any given case. On the contrary, rupture and extensive intra-abdominal hemorrhage can take place so insidiously as to be unobserved even by the patient herself. As a general rule, however, there is some pain similar to that experienced in the beginning of an abortion. This pain, perhaps, begins when the tube attempts to empty itself, after which the uterus takes on some rhythmic contraction. These symptoms are such that I have usually seen in the cases that have been hard to diagnose, that is to say cases whose history would not lead us to suspect an *extra-uterine pregnancy* nor whose symptoms would not necessarily be those commonly met with in such conditions. It must be borne in mind, however, that these silent cases are the ones most frequently met with, and are of course, always the hardest to diagnose.

We are all familiar with the so-called tragic group, where there is a frank rupture, accompanied by massive hemorrhage into the peritoneal cavity, with pain, fainting, shock, leaking skin, imperceptible pulse and pallor and all the train of symptoms that go with so grave a condition. Even with so frank an expression in the symptomatology, a positive diagnosis of *extra-uterine pregnancy* with rupture, cannot always be made short of an operation as shown by the paper "Tubal and Ovarian Hemorrhage," read by Dr. J. Wesley Boyce, of Washington, before the American Gynecological Society, Philadelphia, May 15, 1918. He calls attention to the case of a spinster, 32 years, whose menstruation was usually tardy and lasted about seven days, who the day after her menstruation ceased, fell in the street at mid-day from sudden and severe pain in the hypo-gastrium while on a shopping trip. He was unable to make the diagnosis or rather to differentiate between ovarian hemorrhage, appendicitis and intestinal perforation, but the condition being evidently some grave lesion in the abdomen, she was at once operated upon and a large amount of free blood that had escaped from a small ruptured ovarian cyst, the diameter of which

was estimated at three inches, was found. No other reason for the attack could be given. Dr. Bovee calls attention to the case reported by Doran in a woman critically ill from a supposed tubal pregnancy, in which the operation revealed a large hematocele, formed from blood escaping from the fibriated end of a tube that was neither ruptured, pregnant, enlarged nor inflamed. He suggests that a great many cases have been called *extra-uterine* pregnancy when indeed the hemorrhage came from an unpregnant tube or ovary and was wrongly diagnosed. He says that "one can easily appreciate the rank injustice of such an incomplete diagnosis in virgins and widows."

Edward A. Shumann, of Philadelphia, has written the best monograph on *extra-uterine pregnancy* that the writer has ever read. He has placed what he pleases to call the anatomico-pathological groups into which ectopic gestation falls as follows:

1. The existence of tubal pregnancy, without any leakage of blood into the abdominal cavity whatever.
2. Tubal pregnancy with beginning tubal abortion or a minute rupture, permitting a minute quantity of freed blood to come in contact with peritoneal surfaces.
3. Tubal pregnancy with frank rupture of the sac or tubal abortion.
4. Late abdominal lesions caused by a pre-existing tubal pregnancy, where rupture or tubal abortion has been unrecognized or at least not surgically treated—hematocele, lithopedion formation, old traumatic salpingitis and the like.
5. Ectopic pregnancy other than tubal—ovarian, abdominal and cornual.

The foregoing completes the groups in which a direct diagnosis is necessary. The question of differential diagnosis also readily falls into certain great divisions, as follows:

1. Differential diagnosis of ectopic pregnancy from intrauterine pregnancy, with or without threatened abortion.
2. Differential diagnosis of ectopic pregnancy from lesions of the reproductive tract not associated with pregnancy in any sense, but causing hemorrhage into the pelvic peritoneum—as ovarian apoplexy, unexplained hemorrhage of tubal origin, etc.
3. Differential diagnosis of ectopic preg-

nancy from other acute lesions of the abdomen.

He has thus given us a very useful and sensible outline for our guidance in diagnosis. He gives us a review of all the important authorities on the subject and reaches the following conclusions:

1. Previous general health, and family history is of no diagnostic value.
2. Absolute sterility is not definitely associated with the occurrence of ectopic pregnancy.
3. Relative sterility, especially the one child type, on the contrary, is a significant point, and should be regarded as moderately affirmative.
4. The passage of a considerable interval of time between the last intra-uterine pregnancy and the present suspected ectopic one is unimportant in diagnosis and may be disregarded.
5. A history of pre-existing pelvic disease is of great importance when obtainable, but the absence of such history should not be an influence against a positive diagnosis of ectopic fecundation.
6. Previous abdominal operations indubitably render the patient more liable to aberrant imbedding of the fecund ovum.

He thinks that conditions most likely to be confounded with *extra-uterine pregnancy* are intra-uterine pregnancy with threatened abortion, hemorrhage from the tube or ovary not in relation to pregnancy. Acute salpingitis, acute appendicitis, ovarian cyst with twisted pedicle, rupture of a gastric or duodenal ulcer, ureteral or renal colic.

If your essayist has failed to tell you anything very useful or usable regarding the diagnosis of *extra-uterine pregnancy* in so short a paper, I hope he has at least impressed you with the difficulty and importance of the task, so that we may all be stimulated to greater diligence in our efforts along this line—efforts towards the relief of a condition that is always serious and many times tremendously tragic.

Let us not say with Goethe, "I have alas! philosophy, medicine, jurisprudence, too, and, to my cost, theology with ardent labor studied through, and here I stand with all my lore, poor fool, no wiser than before. I take my students by the nose, I lead them to and fro across the floor and this I know, I can in truth, nothing know."

DISCUSSION.

DR. H. H. SHOULDERS, Nashville.—I am sure we have all enjoyed this paper on the diagnosis of extra-uterine pregnancy. I was impressed with its accuracy in speaking of the difficulty of diagnosis.

I recently reviewed a report of these cases by Graff of the Woman's Hospital, New York, and that happened to be the topic of which he was to make a report of scientific work for the year. He recognized, I believe, forty-two per cent of the cases. That was rather high, although it does not seem any higher than that percentage given by the author.

It seems that one prominent symptom has a bearing on the differential diagnosis. For instance, it was emphasized that those cases with a mild hemorrhage had pain as a prominent symptom, with shock, but not marked, and then following the sudden onset of pain, oftentimes the fear of another condition was misleading; whereas in the severe cases, with marked hemorrhage, pain is negligible that is, it is so overshadowed by the hemorrhage and the shock that it is not complained of. In these cases pain was a prominent symptom in only fifty-eight per cent of the cases; uterine bleeding was present in only twenty-four per cent of the cases; collapse in only fourteen, and about fourteen per cent showed marked shock. My attention was called to these differential points as differentiating this condition from those conditions of the acute inflammatory group, namely, the acute tube and the acute appendix. The patient has had a primary rupture with slight bleeding. That case early in the attack will not give fever. We speak of the importance of recognizing these cases in the first forty-eight hours before inflammation can develop, even if a mixed infection should take place. The inflammatory group will show that. An inflammatory condition rarely ever shows the suddenness of onset that these conditions will show. Of course, they can come on insidiously, as has been pointed out, but that is the average case.

As to the renal colic, it may be sudden in its onset, it may be as sudden as rupture, but it will not be attended by shock, although the pain may far more severe. Pain is prominent, but it will not be attended by the degree of shock that will attend those cases that have less pain.

We might go on and discuss the difficulties of diagnosis of these conditions, but it seems that in most cases a surgical diagnosis is possible and exploration advisable.

DR. WILLIAM T. BLACK, Memphis.—As the essayist has well said, it is not always an easy matter to make a differential diagnosis of tubal pregnancy and other diseases adjacent to the uterus. A clear, well taken history of the case will probably throw more light on it without physical examination than any other one thing. Dr.

Crisler said these cases are usually typical and characteristic. If a patient should come to you with the textbook symptoms of extra-uterine pregnancy, it would be easy to make a diagnosis. These patients miss a period; they give a history of sterility, but fifteen per cent of women are sterile anyway. If they have some pelvic pathology you can discern it, and if they have a soft cervix, then the diagnosis can be made more easily, but remember acute infections and tumor produce a soft cervix. Most of the time these women will come to you and say they have not missed a period; that they have hemorrhage, and in cases of that kind we should think of an acute pelvic infection. If you fail to get that infectious history, look for tubal pregnancy. They bleed and continue to bleed. If the case falls in the fourteen per cent class where they have severe collapse and profuse hemorrhage, it would be easy to make a diagnosis. Where the hemorrhage has taken place slowly, as in tubal abortion and the ostium abdominale not completely closed, you do not have marked symptoms of collapse. On the other hand, you have pain but no rise in temperature. You usually have hemorrhage which continues for a long time, with a decrease in temperature, with an increase in the leukocytes, but not nearly so marked is the leukocytosis as in an acute infection. Where you have an acute infection involving the peritoneum the increase is rapid. If the patient has lost any amount of blood at all, the hemoglobin estimation would be of material benefit. There is a rapid decrease in the hemoglobin and in a day or so a rapid increase. The hardest cases to diagnose are those that have gone on a few days before they are sent to you; then you have a case which has become infected, you have a rise of temperature, you have a high leukocyte count, and the symptoms of a pelvic abscess. These are the cases that are difficult to diagnose.

The differential diagnosis between ruptured tubal pregnancy and ovarian rupture is hard.

Three years ago I was called to the Gayoso Hotel at eleven o'clock at night to see a young lady from Cleveland, who had an acute abdominal pain following the sexual act. She had profound shock. She was married, and the case turned out to be one of ruptured ovarian cyst. The abdomen was full of blood. I have seen another case similar to that one since; making it almost impossible to differentiate between tubal pregnancy and a ruptured ovarian cyst.

DR. J. A. CRISLER, Memphis, (closing).—I desire to close the discussion by simply adding a short history of one case which covers very well the points I have in mind. The patient is a woman, 32 years of age, the mother of four children, the youngest of whom is two and a half years old. She had never been sick in her life except at childbirth. She was due to come unwell. She became

unwell the next day thereafter, since which time she has bleeding with little pain. She is a very fleshy woman. You cannot outline anything. The examining finger readily goes in the cervix. There is no history of shock; there is no history of pain. She had been kept in bed by her physician when I saw her for six weeks, using all sorts of medication, and no cessation of the flow, which was not at any time excessive. I took that woman to the hospital with a diagnosis that she probably had uterine abortion, the very thing I so severely condemned. I gave her a light curettment, and found there was nothing in the uterus but a blood

clot. Under anesthesia I could not feel any enlargement of the tube or neighboring structures. She continued to flow, and then I had a gentleman to give her some light radium treatments after which she began to have pain. I made an abdominal incision and found a quart of blood clots that had escaped through the ruptured tube, and was pathologically reported on as being an extra-uterine pregnancy.

I had three of those cases in one week, and I began to think how impossible it would be for a man who does all sorts of work to make a diagnosis at all. The diagnosis is very hard in a great many of these cases.

PYELITIS

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AT the outset, I believe the term pyelonephritis should be substituted for pyelitis as more accurately describing the pathological condition as we know it. There is much doubt that an inflammatory process of the pelvis can be so closely confined as not to involve some of the parenchyma of the kidney. At least, so far as I am aware, it has not been demonstrated except experimentally by Heinholtz on lower animals. According to Crabtree and Shadden this is a progressive disease in which pyelonephritis is the acute form, pyelitis the chronic form, and surgical kidney the end result of persistent infection. Clinical experience and experimental findings tend to show that anatomically renal infections more or less overlap. This, I believe, accounts for the fact that some of these cases do not clear up under the same treatment that suffices for others. Cabot and Crabtree demonstrated that the pus cocci affect the cortex of the kidney and often follow lines of least resistance towards the periphery; and that colon bacteria affect the straight tubules of the pyr-

amids, extend from them to the pelvis and there produce pyelitis. This is in keeping with the elective action of certain bacteria as advocated by Rosenau.

Embryologically, the kidney has a double origin: from the Wolfian duct spring the ureter, pelvis, calices, and straight collecting tubules. This is the mechanical or collecting part of the kidney, and is lined with pavement epithelium. The medulary portion, in addition to the collecting channels, has the venous channels which carry the purified blood back to the general circulation. This part of the kidney is the most frequent site of infection and calculi. The cortex or the filtering or secreting portion—the arterial side—springs from the mesothelium. This part has been called the medical side of the kidney, as it is here that the nonsurgical lesions take place, such as nephritis, both acute and chronic. These conditions are most likely of toxic, nonbacterial origin, affecting both kidneys alike. Nephritis, the result of living organisms, the so-called type three of W. J. Mayo, is rare, in his opinion, except as a haematogenous infection in the filtering part of the kidney, while it may be more fre-

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, October 24, 1922.

quent in the collecting part of the kidney as an ascending or lymphogenous infection.

PREDISPOSING CAUSES

Recent literature is teeming with reports of work that has been done trying to solve this problem. Rosenau and coworkers at the Mayo clinic have done some very conclusive work along the line of focal infection and elective or selective action of certain bacteria. No longer are we content to make a diagnosis of pyelonephrosis or pyelitis of a certain type and apply local treatment with hope of a complete and permanent cure. In addition to this the predisposing cause must be located, treated, corrected, or removed.

There are certain well recognized predisposing causes, which are mainly, anything that obstructs the outflow of the urine either in the pelvis, ureter, or the bladder, such as hypertrophy of the prostate, stricture, calculi, tumors, kinks of the ureters, movable or floating kidneys, etc. Berlin says: Anatomical and postural environments of the kidneys in man are no doubt the principal predisposing etiological factors in the occurrence of infections of the kidney pelvis. The anatomical structure of the kidney pelvis constitutes the first step in the predisposing cause of localized infection in this area. The pelvic base being larger, narrows down to the outlet at its junction with the ureter, thus having a tendency toward damming up the passage.

The postural environment of the kidneys is the second factor. This consists in the fact that the long axis of the kidney is parallel to the long axis of the body, which impedes the natural drainage by gravity.

Baker, in a study of fifty cases, came to the following conclusions:

"1. These lesions are largely dependent upon infection of a haematogenous origin, the primary focus of which must be diligently sought out and removed before permanency of cure can be hoped for.

"2. Both clinical experience and experimental studies tend to incriminate the tonsils and teeth as chief offenders.

"3. Not only are strictural conditions of the ureters of more frequent occurrence than has been generally supposed, but their presence by mechanically impeding drainage con-

stitutes an important factor which must be reckoned with in the effort to clear away subacute and chronic infections of the urinary tract."

Volkow and Dilitzen, quoted by Keys, advance the theory that shallowness of the lumbar recess in women as compared with men, and on the right side as compared with the left, is competent to explain the preponderance of both right-sided renal mobility and infection.

Crabtree and Shedden in a very complete article last year attempt to prove that the sagging kidney with pelvic stasis is the cause of persistent colon pyelitis. They stress early recognition in order that something be done before the kidney is damaged, which is in accord with the present-day preventive medicine in general. McCown believes that kinks are a more frequent cause of obstruction than is generally recognized, and has been demonstrating minor kinks by plugging the ureteral orifice with a large catheter and injecting the ureters for ureterograms before catheterization, which often straightens out these minor kinks that go unobserved by the passing catheter. He feels that instead of so many ureteral strictures as reported by Hummer that we are straightening out kinks that go unnoticed after the catheter is passed.

Kretchmeir in the study of two hundred cases found that thirty per cent of the patients gave a history of constipation. Of the seventy-eight male patients, thirty-one, or thirty-nine and seven-tenths per cent, had infection of the prostate, seminal vesicles, or both. He lays special stress on these as focal points of infection, and insists that they must be remembered when the general plan of treatment is outlined.

He calls attention to several cases in which he was able to clear up the kidney infection, and these patients were sent back to their family physicians, who were instructed to continue treating the prostate and vesicles along the usual lines. In those instances in which this was not carried out there were recurrences of the kidney infection.

EXCITING CAUSE

In this as in suppurative infections elsewhere the exciting cause is always bacteria.

The colon bacillus is responsible for from seventy-five to eighty-five per cent of the cases, according to different workers. This organism is so frequently the cause that many speak of it and write of it as "colon pyelitis." However, many other organisms have been found to be the exciting cause. In a series of eight hundred thirty-five cases compiled from the literature by Mahlé and Belt the following organisms were found: Colon bacilli, staphylococcus aureus and albus, streptococcus, bacillus acidi lacti, diplococcus, pneumococcus, bacillus influenzae, bacillus proteus, bacillus lacti aerogenes, bacillus of typhoid, bacillus pyocyaneus, bacillus of para typhoid, bacillus enteridis, and gonococcus. Some of Rosenau's work has been done attempting to prove that the colon bacillus, as the most frequent cause, is a secondary infection and that some strains of the streptococcus isolated from the teeth are the primary infection. This has not been accepted by many other workers.

MODE OF INFECTION

The haematogenous is in all probability the most frequent route of infection—at least that is the general consensus of opinion. The ascending lymphogenous route is a probable mode of invasion. Much work has been done by Essendraph, Sweet, and Stewart, which seems to indicate that there is a free communication between the lymph channels surrounding the bladder, ureter, and kidney. They think that the infection is upward by way of the lymph channels and not up the lumen of the ureter or through its blood vessels. Carl Franke, in nineteen hundred fifteen, found a direct lymphatic connection between the ascending colon and the capsule of the right kidney, and that a similar condition probably exists between the descending colon and the left kidney. That infection could travel up the lumen of the ureter from below, especially when there exists some partial or complete obstruction is not hard to believe, since we know that we do have a reverse flow of urine at times. This has been written about by Kretschmeir, Caulk, and many others. Cabot and Crabtree have observed a calculus in the ureter to pass to the lower part and then back to the pelvis of the

kidney. Many have observed substances injected into the bladder later in the kidney pelvis. Shadow-casting fluids have been injected into the bladder for cystographs and observed up the ureter to the kidney pelvis.

Much work has been done and many theories advanced as to the mode of infection to the kidney and kidney pelvis. Time will not permit me to go into these in detail. Suffice it to say that it is generally believed that infection is carried by the blood, or haematogenous route, the lymphogenous route, by direct continuity of tissues up the ureter, and by the lumen.

PATHOLOGY

It is difficult to discuss the pathology of pyelitis or pyelonephritis, because this is a condition which frequently recovers spontaneously or after the injection of the ordinary urinary antiseptics. On the other hand it is no doubt true that many of the cases that do not recover in this manner go on to the end result of a purulent infection—that of a surgical kidney, usually pyelonephrosis, and after it is removed the specimen gives no idea of the pathology of pyelitis.

Morton says that the process begins as a catarrhal inflammation of the mucous membrane of the pelvis, which becomes hyperemic, thickened and velvety. After it has been the seat of chronic inflammation for some time petechial spots and superficial ulcerations occur. In long standing cases the walls of the pelvis are thickened and leathery and the mucous membrane is dull and opaque.

Helmholtz reports in June of this year the pathological changes in experimental ascending and haematogenous pyelitis:

SUMMARY

"Although great care must be exercised in drawing conclusions from experiments on rabbits, nevertheless, if the explanation of the apparent differences in this series has any logical grounds, it may be assumed that similar differences will probably appear in the lesions of human kidneys. Concerning the production of such lesions, especially in infants, we are as yet without definite information or any exact criteria for obtaining the information. Utilization of this method in the histological study of specimens from

human beings might be of value. By means of complete cross sections of rabbits' kidneys it was possible to localize certain infiltrations that characterize haematogenous and ascending infections of the rabbit's kidneys. The lesions produced by intravenous injections tend to localize in the kidney substance and the papilla and adjacent lining of the pelvis. The lesions produced by intracystic injections tend to localize in the small finger-like projections of the parietal wall of the pelvis."

AGE

Renal infection may occur at any age. In Kretschmeir's two hundred cases they range from seven months to eighty years—the largest number between the ages of twenty and forty. It is a well known fact that many cases are seen in early childhood, and while most of them tend to recover spontaneously, or by the administration of alkalies or urinary antiseptics, some of these become more or less chronic and have to have local treatment, pelvic lavage, etc. Cecil, of Los Angeles, calls attention to the fact that we meet with many children with pyelonephritis, and a great many adults, but that it is very rare to meet with a person around the age of fifteen or so with pyelonephritis. This fact has convinced him that pyelonephritis in children in a large majority of cases must be self limited and that a great many of them must recover spontaneously. On the other hand Doctor Quimby, of Boston, has seen a number of cases that have been authentically followed from childhood—in one case to sixteen and another to twenty-one years of age. Each of these cases he tried to cure by lavage but did not succeed. My own experience bears out the observation of Cecil, and I believe these cases of Quimby must be exceptions.

SEX

If one takes into consideration certain renal infections which occur only in women, such as pyelitis of pregnancy, the number of cases in girl babies, the pyelitis of matrimony which has been described by Kretschmeir and many others (it has also been called "defloration pyelitis"). (It is believed that the tears of the hymen serve as a tria for the colon bacillus to enter. I have seen two such cases) then one will not be surprised that it is more

prevalent among females. Most of the data that I have been able to find gives the percentage as about sixty per cent females and forty males.

SYMPTOMS AND DIAGNOSIS

The diagnosis of pyelonephritis or pyelitis is usually not very difficult. There is a renal infection, the so-called "septic infarct kidney," that Brewer, of New York, first described and did much clinical and experimental work with—that is not included in this brief discussion. Suffice it to say that this is the most dramatic and tragic picture in all kidney infections. It is acute and fulminant, usually of streptococic origin and often fatal. The vagueness and oftentimes total absence of localizing renal symptoms render the condition exceedingly difficult to differentiate from other intra-abdominal lesions. Fortunately this is rare.

In the cases in which the invading organism is of a less virulent strain, as most of them are, we have a patient who may be acutely ill, but not desperately so. Bladder symptoms are the most constant complaint, such as frequency of urination, pain and burning on urination, urgency, incontinence, difficulty, turbidity of urine, blood, pus, and bacteria. Any and all grades of constitutional symptoms may be present. Pain and tenderness in the loin, especially localized at the costo-vertebral angles which can be elicited by a sudden blow over this area. (Murphy sign.) Of all the symptoms and signs a careful examination of the urine, associated with the symptoms, a provisional diagnosis may be made in a larger number of cases. A diagnosis based on the symptomatology alone is futile and should never be indulged in. The symptoms in some of the acute cases are very misleading. This accounts for the most of the mistaken diagnoses, and in reality it is because the most important part of the examination in the case has been omitted. Therefore the first step in the diagnosis is to demonstrate pus and bacteria in the urine. The next step is to determine the source of the pus and bacteria. This is done by cystoscopy and ureteral catheterization, which determines whether the pus is from the bladder, right, left, or both kidneys. After you have proven the pus and bacteria to be from one

or both kidneys your chances for error are small, as you only have to differentiate this from other lesions of the kidney in which pus and bacteria are found in the urine, such as strictures and stone in the ureter, stone in the kidney, renal tuberculosis, tumor, and hydro-nephrosis. Most of the errors in diagnosis of kidney lesions are due to the fact that careful examinations of the urine are not made. When abnormal elements are found in the urine and this is followed by a careful and complete urological examination the percentage of errors in diagnosis is relatively small. Pyelitis is not hard to diagnose, but it is easy to overlook. In all modern and well regulated hospitals where urinalysis is routine and required before surgery is done many of these cases are caught and often saved from surgery.

Stones in the ureter and kidney can be excluded by x-ray and wax-tip catheters. With modern technique the percentage of stones overlooked is small. I know of no other means by which this percentage of error can be lowered.

Renal tuberculosis may be a difficult diagnosis, especially the early cases in which there is no bladder involvement. When there is a mixed infection such as is shown occasionally by positive cultures of colon bacilli, which type of case has often been treated for pyelitis,—diligent and repeated search for tubercle bacilli should be made in the urine. In doubtful cases guinea pig inoculation should be resorted to. More advanced renal tuberculosis will not be mistaken often after a complete urological examination, in which we find pus and blood in the urine and no bacteria, or the tubercle bacilli, bladder involvement as shown by the cystoscope, and typical pyelograms.

Strictures of the ureters, hydro-nephrosis, and kidney tumors can be differentiated by ureterograms and pyelograms, combined with symptoms and other findings.

Most of the incorrect diagnoses in these cases of pyelonephritis are made because they are symptomatic diagnoses; a careful urinalysis has not been made, or has been overlooked. In other words, they are sins of omission rather than commission. That these

mistaken diagnoses are made, and my opinion too often, is attested to by many reports in the literature. Baker in a study of fifty cases found that seven, or fourteen per cent, had been operated upon during an acute attack for acute appendicitis (two of the seven were his own mistakes); eleven, or twenty-two per cent, had been operated upon for chronic appendicitis; and in six others, or twelve per cent, the diagnosis had been made but operation refused; nine, or eighteen per cent, had operations on the reproductive organs. All told, fifty-four per cent had either had useless operations or had refused such advice. Baker's closing remark in this report is: "Pay careful heed to the upper urinary tract before making your abdominal incision." In Kretschmer's two hundred cases the percentage was better; only forty-four and one-half per cent gave a history of having had some sort of surgical operation. From the literature at hand, and in the light of some personal experiences and observations, I am sure that mistaken diagnoses are frequently made, and all out of proportion to the real difficulty involved.

TREATMENT

Acute Pyelonephritis.—It seems from the literature that the prognosis for cure of acute pyelonephritis is good and irrespective of the drugs used. The essentials in the treatment are rest in bed, forced fluids, light diet, and medicine for the relief of pain and bladder distress. While some seem to be satisfied with this alone, most workers prefer to give some of the alkalizing drugs, such as sodium bicarbonate or sodium citrate. Some give a short course of hexamethylenamin first. Curtailing the intake of fluids is advocated by some to increase the formalin concentration. Personally I prefer large quantities of water and hexamethylenamin to be carefully watched for aggravation of bladder symptoms. The very fact that the results are about the same, and usually good, under the various forms of the so-called expectant treatment justifies the belief that acute pyelonephritis is in the nature of a self-limited disease. Most observers think cystoscopy and bladder instrumentation are usually contraindicated.

CHRONIC PYELITIS

This can best be considered under four headings: (1) Pelvic lavage; (2) over dilation of the ureters by the method of Hunner; (3) renal suspension and plastic operation on ureter and pelvis; (4) elimination of focal infection areas.

Pelvic Lavage.—Pelvic lavage stands pre-eminently and undoubtedly at the head of the list. Whether it is the mere passage of the ureteral catheter or the lavage of the kidney pelvis, or both, has been questioned by some. I believe that where the catheter relieves a definite obstruction and allows free passage along the ureter it may and has been known to suffice. All workers have had the experience of passing a catheter for diagnosis which seemed to produce a cure. Also the very fact that so many different drugs have been used and that any one seems to be just as efficacious as any other in a certain class of cases makes me think that the mere passing of the catheter is sufficient. In performing pelvic lavage the catheter should be passed all the way into the renal pelvis. I employ a twenty c.c. syringe and inject from five to ten c.c. and allow it to return before continuing. I am in the habit of using a one to two per cent nitrate of silver solution. Some use this stronger. Many other solutions have been and are being used, namely; mercurochrome, oxygen-

ate of mercury, argyrol, protorgal, silvol, and many others. Lavage is usually repeated about every four days until the urine is free from bacteria.

Over dilation.—Over dilation is advocated in known strictures, in cases where there is considerable damage to the pelvis and ureter on both sides, and in dilated upper portions of the ureter. Hunner first advocated this method of treatment.

Renal Suspension and Plastic.—Renal plastic work should always be reserved as a last resort in the ordinary case. When we are able to get pyelograms that show conclusively the sagging kidney to be the cause of pelvic stasis and the kidney function is good, then fixation, or plastic operations on ureter or pelvis should be considered. It should be remembered that renal changes take place fairly rapidly after definite stasis, and if fixation is to be of any avail it must be early.

Elimination of Focal Infection Areas.—Focal infection areas must be sought for in all chronic cases. The utter futility of trying to clean up the kidney pelvis by lavage and allowing the cause to remain is apparent to all. I think this is a point that has been much overlooked until recently, and I feel sure that it is the most important feature in bringing about a complete and permanent cure.

*THE PRESENT STATUS OF PYLOROPLASTY

W. M. McCABE, M.D., F.A.C.S., ASSOCIATE PROFESSOR OF SURGERY, VANDERBILT SCHOOL OF MEDICINE, NASHVILLE.

IF one makes a search of the literature he will be surprised at the number of articles written on gastric and duodenal ulcers. This is indicative that the treatment is, to say the least, not thoroughly systematized.

Gastro-enterostomy has been performed for so many conditions within and without the stomach that one is not justified in condemn-

ing it. A truthful criticism of it, however, is in order. It has been a much abused operation and unfortunately occupies a position which usually calls forth commendation from the surgeon and censure from the internist.

The results following gastro-enterostomy are variously estimated from naught to sixty per cent. Bastedo says: "In our practice ulcer cases that have had one or more operations come for treatment almost as frequently

*Read before the Tennessee State Medical Association at Memphis, April 11-13, 1922.

as ulcer cases that have not been operated upon. Smythies claims that only 20.9 per cent of gastric and duodenal ulcer cases are complaint free after a few years following gastro-enterostomy. Davis says that as results now stand from fifteen to forty per cent of the operations done for gastric ulcers are failures. Balfour reports 285 cases of gastric ulcer operated upon at the Mayo Clinic with 55.7 per cent complaint free.

Moynihan claims that most of the disappointments following gastro-enterostomy are because the operation was badly performed or because pathology outside of the stomach or duodenum was overlooked. In the same article he says the most serious sequela of gastro-enterostomy is jejunal ulcer and mentions two cases in which jejunal ulcer followed the operation when no ulcer existed in the stomach or duodenum. Charles H. Mayo reports eighty-three patients with gastro jejunal ulcer, of which forty-seven followed gastro-enterostomy performed in the clinic for benign duodenal or gastric ulcer, and thirty-six followed primary operations performed elsewhere. Vander Veer, Erdmann, Wilensky and others report similar cases. Mann and Kawamura report two cases of ulcer of the jejunum following duodenectomy in dogs. Of ten dogs autopsied two had jejunal ulcers; one perforated on the 515th day after operation and the other was found at autopsy 383 days after operation.

Finney and Friedenwald in their report of one hundred cases of pyloroplasty mention two cases in which a secondary operation was required because of the presence of duodenal ulcer. In one case it was evidently a direct recurrence, and in the other it was evidently an independent ulcer. While we do not believe that secondary operations will be required as often after pyloroplasty as after gastro-enterostomy the fact remains that they are sometimes necessary.

That gastro-enterostomy produces a marked change in the physiology of the stomach and jejunum no one can doubt. Robert Hutchinson concludes that gastro-enterostomy profoundly affects the gastric function both secretory and motor, and it is not the simple drainage procedure sometimes pictured.

Howell says: "There is a certain orderliness in the movements of the stomach and especially in the separation and ejection of the mere liquid from the solid parts which show the existence of a specially adapted mechanism. When chymification is complete the pyloric sphincter opens and as soon as the acid chyme enters the duodenum the prosecretin is transformed into secretin and the pancreatic secretion begins, then by the process of rhythmic segmentation the duodenum by vigorous churning movements brings bile and pancreatic ferments into intimate contact with every particle of chyme before it is allowed to pass on into the jejunum." When one considers the revolutionary changes which take place following a gastro-enterostomy it is a wonder that even 55.7 per cent of the patients are complaint free at any time during their existence.

Pyloroplasty of the Finney or Horsley type is an operation built on physiological principles and in many instances can replace gastro-enterostomy.

Finney and Friedenwald in a statistical review of one hundred cases of pyloroplasty show satisfactory recoveries in 93.4 per cent. If 5 per cent is deducted for these cases in which immediate death resulted the percentage of favorable results is reduced to 88.8 per cent. The immediate deaths were due to persistent vomiting associated with pregnancy, atrophy of the liver, broncho-pneumonia, shock and chronic nephritis (uremia.).

Secondary operations were performed for pyloric obstruction, due to adhesions produced by gall bladder infection eleven years after pyloroplasty, duodenal ulcer formed five years after pyloroplasty, infected sutures, causing immediate obstruction at the sight of pyloroplasty requiring gastro-enterostomy after five days, duodenal ulcer after one and one-half years.

In this series of cases there are fifty-five cases of gastric ulcer and thirty-two duodenal ulcer. In addition pyloroplasty was performed upon two cases of gastroparesis, in three for pylorospasm, six for pyloric stenosis due to adhesion and one to closing of a gastro-enterostomy.

As an additional factor in determining the satisfactory results x-ray plates were made in five cases, all of which had been operated on over one year and the stomach was found to be functioning perfectly normal in all, emptying itself at a normal rate.

Finney and Friedenwald conclude:

1. The operation has its greatest indication in the relief of pyloric stenosis due to chronic ulcer situated at or near the pylorus and on either side of it, or from cicatricial contraction following the healing of such ulcers. It is also a useful procedure in cases of hemorrhage due to gastric ulcers on the lesser curvature, or to duodenal ulcer which cannot be controlled medically and which threatens the life of the patient as well as in chronic dyspepsias, due to ulcers which have not been relieved by medical treatment.

2. The operation has certain advantages over gastro-enterostomy and but few of its disadvantages.

3. Such objections as are urged against the operation, e. g.; its inapplicability in the presence of adhesions surrounding the pylorus as well as in the presence of active and bleeding ulcers, and also because of the fact that the new opening is not at its lowest point, taking advantage of gravity, are according to our experience, more fanciful than real, since the operation has frequently been performed under these conditions with most gratifying results. The interesting experimental work of Cannon and Blake and others supports our contention.

4. The only contra-indications to the operation are inability to mobilize the duodenum when adhesions are too dense, and thickening and infiltration about the pylorus due to hypertrophic forms of ulceration. These conditions, however, in our experience occur but rarely.

5. In atony or gastropptosis with slight motor insufficiency such as is observed in "water-trap" stomach, or in nervous dyspepsia, i. e., in gastric disturbances not dependent upon organic diseases this operation is contra-indicated.

6. The special advantages of this operative procedure lie in its affording the opportunity to excise all ulcers in the anterior walls

of the stomach or duodenum after direct inspections of the part affected, also the application of treatment to ulcers situated in the posterior walls. It does not greatly disturb the normal relation between the stomach and intestines as is the case in other operations.

7. From our experience with the operation the immediate as well as the final results are most encouraging. While in some instances partial gastrectomy or gastro-enterostomy is undoubtedly the operation of choice, nevertheless, on account of its simplicity and because of its satisfactory results, we believe pyloroplasty will continue to retain its position as a safe and useful procedure.

Horsley has devised a pyloroplasty physiologically correct and technically sound. It is as simple as the Finney operation and should prove as efficacious. He reports eleven cases, two of which died. One patient died on the twenty-first day following a transgastric resection of an ulcer on the posterior wall which was closed with mattress sutures. Post-mortem showed the ulcer had extended, the sutures were tied too tightly and cut through the mucous coat. The second death occurred on the ninth day from hemorrhage, resulting from cutting cicatricial tissue too deeply at the pylorus. Horsley says that there is a distinct field for gastro-enterostomy in about twenty-five per cent of lesions of the stomach and duodenum, but there are three types of cases in which gastro-enterostomy is a better operation than pyloroplasty.

1. In inoperable cancer of the pylorus with obstruction the necessity for gastro-enterostomy is obvious.

2. In dense and wide stenosis of the pylorus and upper duodenum when unaccompanied by hemorrhages it is difficult or impossible to mobilize the duodenum sufficiently to give access to it and pyloroplasty is much more difficult than in simple ulcer or in a slight stenosis that is readily accessible, again this type of case gives a particularly good result after gastro-enterostomy.

3. In subacute perforation or in large ulcers when the pylorus and surrounding tissues are infiltrated with inflammatory products, the tissues are difficult to mobilize and do not hold sutures satisfactorily. If the infiltra-

tion is extensive it is quite probable that stenosis will result and such cases do particularly well after gastro-enterostomy.

It is a well demonstrated fact that gastro-enterostomy is exceedingly efficacious in cases where the pylorus is obstructed.

Deaver says (personal communication): "A pyloroplasty is preferable to a gastro-enterostomy, when it can be performed, as it depends whether or not it involves the pylorus and duodenum."

Crile says (personal communication): "In our experience we secure the best clinical results in suitable cases from pyloroplasties. We have generally made these of the Finney type although the Horsley method is also excellent. Although there appeared at first to be a somewhat higher mortality rate by increasing control of every feature of the treatment this has been obviated."

Coffey says (personal communication): "I am a very strong advocate of gastro-enterostomy as the principal agent for the cure of duodenal ulcer particularly. I have done probably a dozen or more of the Finney pyloroplasties with very good success. However, I think there is a special indication for the pyloroplasty. I do not believe in it for treatment of an active duodenal ulcer."

Balfour says (personal communication): "It is not an easy matter to go over the relative merits of pyloroplasty and gastro-enterostomy in any brief way, but it would be comparatively accurate to state the situation in Mayo Clinic at the present time as follows: A larger percentage of pyloroplasties are being done than heretofore; this is probably due to the fact that we are seeing ulcers in an earlier stage than at any time in the past. When we find a small ulcer near the pylorus on the anterior wall, the question of pyloroplasty arises and there certainly is an advantage in the excision of such an ulcer followed by a Finney pyloroplasty, inasmuch as such an operation gives a view of the posterior wall of the duodenum and pylorus and enables one to detect other ulcers. Pyloroplasty is also useful when the division of a gastro-enterostomy becomes necessary because of gastro-jejunal or jejunal ulcer. It is our experience here, however, that gastro-enteros-

tomy is still the basic procedure in ulcers of the duodenum and in ulcers of the stomach it is practically always combined with excision of the ulcer and still constitutes our most frequent method of management. I think the best management of ulcers of the stomach and duodenum at present is the correct application of these methods of proved value which we have at hand for dealing with the lesions. I am sure that when we learn the correct application for the various operations that pyloroplasty will be found to have a very distinct and useful field."

Sir Berkley Moynihan says: "The operation of Finney and the operation of Kocher have, however, a distinct place in surgery and it is by no means unlikely that in the future they will be performed in a certain class of cases for which gastro-enterostomy is now the chosen method."

Warbasse, speaking of the Finney operation, says: "It is one of the most useful operations in surgery, and is destined to play a larger role than has been its lot."

Binney says: "Finney's operation is a most valuable contribution to surgery, and in many cases is a desirable substitute for gastro-enterostomy."

W. J. Mayo says he treats jejunal ulcer following gastro-enterostomy by disconnecting the gastro-enterostomy and doing Finney pyloroplasty.

It is our opinion that the present status of pyloroplasty is as follows:

1. It can be used in all cases of ulcer of the stomach in which gastro-enterostomy is indicated except in case of cancer of the pylorus or where it is impossible to mobilize the pylorus. It is preferable to gastro-enterostomy because it disturbs physiological relation very little, and because it allows of direct treatment of the ulcer.

2. It is preferable to gastro-enterostomy in ulcer of the duodenum so situated that it can be removed in the performance of the operation. Gastro-enterostomy is to be preferred in ulcer which cannot be removed. I include here ulcers which are so situated that removal is possible but not in the performance of pyloroplasty.

2. It is the operation of choice in gastro-jejunal ulcer following gastro-enterostomy in which the gastro-enterostomy opening is detached.

4. It can be used satisfactorily in pyloric stenosis, but gastro-enterostomy has given its best results in these cases.

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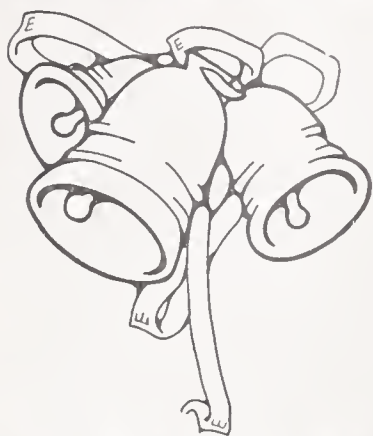
DISCUSSION.

DR. W. C. DIXON, Nashville.—Dr. McCabe has given us a very clear presentation of the subject of pyloroplasty, although I think he rather, probably unconsciously, reflected on our old standby—gastro-enterostomy. He quoted a large series of statistics from Dr. Smithies with reference to the unsatisfactory results concerning patients on whom a gastro-enterostomy was done. All of us realize fully that unless a patient has a definite lesion of the stomach or duodenum gastro-enterostomy is contra-indicated. Probably some of Dr. Smithie's cases were neurasthenics. Probably some of them had, as pointed out by Moynihan, their ulcer located in the right lower quadrant of the abdomen, in the appendix and not in the stomach. It would only be fair in such large statistics if we include all the patients who had definitely proven ulcer at the time of operation.

I believe Dr. McCabe, according to his indications, believes gastro-enterostomy is still the basic procedure, as he quoted Dr. Coffey with regard to the treatment of ulcer of the stomach and duodenum. We all know that in the case of ulcer of the stomach or duodenum, where it is possible to resort to direct treatment of the ulcer, excision or destruction of the ulcer by the cautery adds very much to the value of any procedure. It would be perfectly safe to follow Dr. McCabe's conclusions with reference to the value of pyloroplasty when he said that a small ulcer situated on the duodenum or stomach near the pylorus can be excised at the time the pyloroplasty is done. My experience covers only a very small percentage of such ulcers that come to operation. If you get these cases very early you may find that type of ulcer. The ones I have seen are not willing to submit to surgery until they have more symptoms than are produced by that type of ulcer. I believe where the ulcer area can be excised at the pylorus or in the stomach or duodenal side, a pyloroplasty is all right. I am firmly convinced however that the vast majority of ulcers of the stomach and duodenum can be dealt with by gastro-enterostomy combined with direct destruction of the ulcer by excision or by the cautery, and that it is the procedure of choice.

Dr. McCabe mentioned another limitation which puts pyloroplasty in a small field, and that is an ulcer situated within three-quarters of an inch of the pylorus. Of course, that takes in a good many ulcers, but we still find many ulcers on the lesser curvature of the stomach or farther down in the duodenum that would not be handled by this type of pyloroplasty. I personally believe that the treatment of the ulcer by cautery or by excision, preferably by cautery combined with gastro-enterostomy is an easier procedure than pyloroplasty.

DR. W. M. McCABE, Nashville, (closing).—The object of my paper was not to condemn gastro-enterostomy. However, I do not believe gastro-enterostomy a panacea for all pathological conditions within the stomach. I believe pyloroplasty has a place in stomach surgery, and that its use will increase. I think at the present time that pyloroplasty is indicated in about twenty-five per cent of the cases of gastric and duodenal ulcers.



Merry Christmas and a Happy, Prosperous New Year

To all the Members of the Tennessee State Medical Association is the sincere wish of those to whom you have entrusted the publication of the Journal

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DR. OLIN WEST, SECRETARY OF THE
AMERICAN MEDICAL ASSOCIATION

On November the sixteenth, the Trustees of the American Medical Association elected Dr. Olin West, Secretary of the national body to fill the unexpired term of the late Dr. Alexander Rightor Craig. The proceeding was no mere perfunctory casting of ballots, for the names of a number of men were discussed and when the vote was finally taken, Dr. West was elected unanimously, by this most representative body of the members of the medical profession in America.

When Dr. West relinquished the editorship of this Journal and the Secretaryship of the Tennessee State Medical Association to accept the office of Field Secretary of the American Medical Association and went to Chicago, his departure was followed by the regret, esteem and affection of the members of this state association, also by the certainty that should his talents and well recognized qualities be given full scope, adequate recognition would certainly follow, as events

have demonstrated. In the epigrammatic exclamation of one of his friends: "We knew it all the time!"

TENNESSEE'S APPROVED HOSPITALS.

The report for the year 1922 of the program of hospital standardization of the American College of Surgeons appears in the November issue of "Surgery, Gynecology and Obstetrics," the official publication of that organization. It includes a list of 1,012 General Hospitals of 50 or more beds in the United States and Canada which meet the minimum standard of the College. This is the first time the College has published a list of approved hospitals having a capacity under 100 beds though this class has been under observation since 1920. It is encouraging to note that 41 per cent of these smaller hospitals are on the approved list. This exceeds the percentage of hundred bed hospitals which met with the approval at the time of the first survey.

The list of approved hospitals in Tennessee, of fifty beds or over, are as follows:

100 or More Beds

Baptist Memorial Hospital, Memphis.
Erlanger Hospital, Chattanooga.
Geo. W. Hubbard Hospital, Nashville.
Knoxville General Hospital, Knoxville.
Nashville City Hospital, Nashville.
St. Joseph's Hospital, Memphis.
St. Thomas Hospital, Nashville.
Vanderbilt University Hospital, Nashville.

50 to 100 Beds

Baird-Dulaney Hospital, Dyersburg.

Fort Sanders Hospital, Knoxville.

Newell Sanitarium, Chattanooga.

Women's Hospital, Nashville.

There are hospitals in Tennessee which are not included in the above lists but should be there. Why they are not listed it is not possible to say definitely but the presumption is that the hospitals themselves are to blame.

The "minimum standard" prescribed by the College of Surgeons is within the reach of every hospital that will make an effort. The attitude of the College is one of helpfulness; criticism is purely that of a constructive nature. There is allowed the utmost latitude in regard to staff formation, record forms, and methods of administration of the hospitals. The aim of the College is to have hospitals in fact as well as in name—not merely boarding houses for the sick; to give to the patient intelligent care by honest doctors. The whole purpose, therefore, is to give the sick, the maimed and the afflicted the best care it is possible for them to receive in the community in which they live. The equation is very simple: better hospitals, plus better physicians equals better care and quicker return to health for the patient.

The College of Surgeons is not infallible and does not pretend to be; it is human and therefore the human element will always be found in it as it is in everything else on this mundane sphere. But the probabilities are that if a hospital has been inspected by the College and is not placed on the approved list, there is something wrong with that hospital.

VANDERBILT WINS FIRST PRIZE

The Vanderbilt School of Medicine, and Dr. B. T. Terry, Head of the Department of Pathology, in particular, should be congratulated on winning the first prize in the Scientific Exhibits at the Chattanooga meeting of the Southern Medical Association. Many, but not all, of the Southern medical colleges were represented.

The exhibit was of gross pathological specimens and consisted in the main of the ma-

terial used in teaching the gross pathology in the Vanderbilt School of Medicine.

As was natural from any reward of a first prize, the exhibit received quite a bit of newspaper notoriety in Chattanooga and later in Nashville. It was of a very impersonal nature and should do a great deal of good in educating the public in the necessity of, and the great good that can come from, autopsies.

ROSTER OF MEMBERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION FOR 1922

The attention of the Association is invited to the annually published list of members which appears in this issue of the Journal.

In a list of this nature it is nearly impossible to avoid some errors and the publishers earnestly request all members detecting any variations in its accuracy, immediately to report them to the Secretary, to the end that the records may be kept as nearly perfect as is practicable.

MEDICAL NEWS AND NOTES

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners announces the following dates for its next examinations:

Part I: February 12, 13 and 14, 1923.

Part II: February 15 and 16, 1923.

The fees for these examinations have been continued at the reduced rate for another year. Applications for these examinations must be forwarded not later than January 1, 1923. Application blanks and circulars of information may be obtained from the Secretary of the National Board, Dr. J. S. Rodman, Medical Arts Building, Philadelphia, Pa.

The Southern Medical Association met in Chattanooga November 13-16. The meeting was a success in every particular and it was said that the attendance was the second largest in the history of the Association. The Chattanooga Academy of Medicine is to be congratulated on the manner in which it provided for its guests. The Committees worked untiringly for the comfort of the members and they were rewarded by a feeling that they were instrumental in making the Chattanooga meeting of the Association one of the best in its history.

The next meeting of the Southern Medical Association will be held in Washington, D. C., in No-

vember 1923. Just why such an isolated location, in respect to membership of the Association is not clear. The selection of Washington did not meet with universal approbation. One member remarked that it reminded him of the time the erstwhile Mississippi Valley Medical Association selected Asheville, N. C., as a place of one of its meetings.

The popularity of golf among the members of the Southern Medical Association was attested by the number of golf bags seen in the lobbies of the hotels, and the number of doctors seen on the golf links. It was suggested that a new and appropriate name for the Association be "The Southern Medical and Golf Association." Abe Martin spoke more truth than would appear at first sight when he said: "Mrs. Lafe Budd died before the doctors could dress and come in from the golf club."

THE NEW HOME OF HYNSON, WESTCOTT & DUNNING OF BALTIMORE

This national drug firm has just erected and occupied its own building at Charles and Case Streets, Baltimore. The building is artistic in appearance and adapted to accommodate the several departments of their rapidly developing business which began in a small way in 1889, but has grown to a million a year, with an organization of 125 people. Their unique sales department alone comprises 19 men who visit physicians in all parts of the United States, but do not sell goods. Thirty-five of their products have been accepted by the Council, and are advertised in this Journal. None of their preparations are offered direct to the public but are introduced to the medical profession for the use of physicians and their patients. Mr. H. P. Hynson, one of the founders, died in 1921; but their growing business has now been established in new quarters under the immediate supervision of Messrs. James W. Westcott and H. A. B. Dunning (the latter being the active administrator) with a highly trained force, equipped to meet promptly the demands of the medical profession anywhere and at all times.

DEPARTMENT OF COMMERCE DEATH RATE: 1921

The Department of Commerce announces that the compilations made by the Bureau of the Census indicate that 1921 was a remarkably healthful year. Record low death rates appear for nearly all areas. The lowest state rate (8.2) is shown for Montana and the highest (14.2) for Vermont. For cities which at the last census had populations of 100,000 or more, the lowest rate (7.5) is shown for Akron and the highest (17.4) for Memphis.

Crude death rates by no means tell the whole story regarding the healthfulness of different localities. Race stock, occupations of the inhabitants

the sex and age distribution of the population, and the relative number of deaths of non-residents are factors which must be considered before it can be determined that one city or state is more healthful than another.

IMPORTANT ANNOUNCEMENT

The medical profession everywhere will be interested in the announcement that the Abbott Laboratories of Chicago have purchased the Dermatological Research Laboratories of Philadelphia. This is an advance step for the Abbott Laboratories and will give them deserved recognition among the leading manufacturers of medicinal products.

It will be remembered the Dermatological Research Laboratories were the first in the United States to produce Arsphenamine during the war when there was such a scarcity of this article; and these Laboratories became well known to the medical profession; and for their patriotic attitude in developing and manufacturing medicinal preparations in this country.

By this purchase of the "DRI" products, the Abbott Laboratories inherited their prestige.

The Abbott Laboratories acquired control of the Dermatological Research Laboratories on November 1; and are continuing to operate them in Philadelphia under the direction of Dr. Geo. W. Raiziss, head of the department of Chemistry, and his corps of specially trained assistants. For particulars regarding their purchase of the Dermatological Research Laboratories, the readers of this Journal are referred to the statement of the Abbott Laboratories on another page of this issue, entitled, "Important announcement to the medical profession."

CONFERENCES OF SECRETARIES OF CONSTITUENT STATE MEDICAL ASSOCIATIONS OF A. M. A.

The above stated conference was held in Chicago November 17-18, with almost every state in the Union represented, and the following program was observed, requiring two days for its completion:

1. The Functions of the Council of the State Medical Association.

Introductory Remarks.

Dr. Olin West, Field Secretary, American Medical Association.

What Is the Council Doing in My State?

Each secretary will be called on to reply.

2. Programs of Work—Scientific and Otherwise—for State Associations and Their Component County Societies.

Dr. L. B. McBrayer, Secretary, Medical Society of the State of North Carolina.

3. The Work of the Bureau of Legal Medicine and Legislation of the American Medical Association.

Dr. W. C. Woodward, Executive Secretary.

4. The Contact of the State Medical Association and Its Component Societies with Other Organizations and with the Public.

The Michigan Plan: The Joint Committee on Public Education.

Dr. F. C. Warnshuis, Secretary, Michigan Medical Society.

The Public Health League Plan.

Dr. F. B. Stephenson, Secretary, Colorado State Medical Society.

The Iowa Plan: The Field Activities Committee.

Dr. Tom B. Throckmorton, Secretary, Iowa State Medical Society, and Dr. F. E. Sampson, Director, Field Activities, Iowa State Medical Society.

The State Medical Association and the State Department of Health.

Dr. J. H. J. Upham, Chairman, Council on Health and Public Instruction, Ohio State Medical Association.

The State Medical Association and the Teachers.

Dr. John M. Dodson, Chairman, Joint Committee of the National Education Association on Health Problems in Education, and Prof. W. B. Owen, President, National Education Association.

5. The Promotion of Periodic Health Examinations by the Medical Profession.

Dr. Victor C. Vaughan, Chairman, Council on Health and Public Instruction, American Medical Association.

6. Miscellaneous Topics:

- a. State and County Society Records.
- b. The Non-Affiliated Physician.
- c. Annual Dues. Are Present Amounts Adequate?
- d. Transference of Membership from One State to Another.

It is hoped that the next issue of this Journal will contain the able paper presented by Dr. Olin West which opened the discussions of the meeting.

The idea dominating the remarks of all of the secretaries was the importance of the functions of the Councillor and what a power for good in organized medicine an efficient one is.

MIDDLE TENNESSEE MEDICAL ASSOCIATION

On November 9th and 10th, at Murfreesboro, the Middle Tennessee Medical Association held its fifty-sixth semi-annual meeting, which was one of the very best, if not the very best, known in the history of the association. The weather was perfect, the attendance unusually large, the papers and discussions of a particularly high order, all supplemented by numerous entertainments and a warm hospitality that was lavish in extent.

Lebanon was determined upon as the next place of meeting, in the second week of May, 1923.

MISCELLANEOUS

DEATH FOLLOWING THE ADMINISTRATION OF THYMOL

Milford E. Barnes, Bangkok, Siam (*Journal A. M. A.*, Sept. 16, 1922), reports two fatal cases following the administration of thymol for the relief of hookworm infestation. The majority of patients treated with thymol show some signs of its toxic action, such as flushed face, slight dizziness, and drowsiness. The symptoms usually disappear rapidly after the administration of the final purge. In some countries the drug is dispensed to the patients, who are permitted to take it in their homes without medical supervision. This practice is not followed in Siam, where the entire course of treatment is personally administered by the medical officer in charge or by his trained dispensers. These rules have been adopted for the administration of thymol: (1) A preliminary small dose of magnesium sulphate is taken by the patient the evening before treatment. (2) No breakfast is permitted on the day of treatment. (3) At 7 a.m., 20 grains (1.3 gm.) of thymol mixed with an equal amount of lactose is administered in capsule. (4) At 9 a.m., an additional dose of 20 grains of thymol is given. (5) At 10 a.m., a final purgative dose of magnesium sulphate in hot water is administered.

OBSERVATION OF THE TREATMENT OF SYPHILIS IN PREGNANCY IN THE DEPARTMENT OF HEALTH IN DETROIT

WALTER E. WELZ AND ALFRED NEST
AMERICAN JOURNAL OF OBSTETRICS AND
GYNECOLOGY, Vol. IV, No. 2,
AUGUST, 1922.

Most obstetricians find that the greatest causative factor in premature deliveries and macerated feti is syphilis. At Prenatal I of the Department of Health of Detroit an attempt has been made to lessen the incidents of congenital syphilis through parental care. During 1921, 1467 new prenatal cases attended the clinic. Of them, 46.6 per cent were white and 52.4 per cent were colored. Of the total,

13.1 per cent were diagnosed as syphilitic. Among the white patients, 5.7 per cent were syphilitic, and among the colored, 19.3 per cent were syphilitic. Of the total of 193 patients having syphilis, only 147 were cared for through pregnancy. The following conclusions were made:

About 85 per cent of the mothers diagnosed as syphilitic suffered from latent syphilis. It was not through complaint but through routine examination that these were discovered.

Early diagnosis and treatment are of utmost importance. As syphilis is transmitted only through the placenta to the fetus after a period of about three months, it is evident that treatment instituted early in pregnancy can prevent fetal transmission. After the fetus is infected, the possibility of fetal cure is lessened and it is most difficult to accomplish. It is questionable whether anti-syphilitic treatment through the mother can be of any value to the fetus in utero when the vital organs of the fetus are severely involved. Full treatment should be attempted even at the end of pregnancy in hope of securing a controlled case in a living child which can be further cared for after birth.

The injection of neosalvarsan was not found to produce miscarriage or premature deliveries. With a small initial dosage, gm. 0.3, and an increase to gm. 0.45 or gm. 0.6 in weekly injections, no harm results.

Those mothers who have not completed their treatment before delivery are urged to return for the completion of treatment after delivery. They are also urged to return to the clinic for examinations and care as soon as future pregnancies are suspected.

Every prenatal case should be carefully examined for syphilis. Routine examinations of placenta and fetus for signs of syphilis are valuable not only to the child, but to subsequent children which are born after proper treatment has been instituted upon the mother.

A PANCREATIC HORMONE IN DIABETES.

Less than half a century has elapsed since the pregnant discovery, by von Mering and Minkowski in 1889, of the highly important

part which the pancreatic gland plays in the control of carbohydrate metabolism in the body. Their classic experiments demonstrated that if the pancreas is completely extirpated, hyperglycemia, glycosuria, and the complete loss of the power to burn glucose or other carbohydrates ensue. There are many reasons for believing that lesions of the pancreas in man lead to disturbances in the metabolism of sugar such as manifest themselves clearly in the diabetic. Whether the determining lesions are confined to the islets of Langerhans in the pancreas, as some pathologic histologists assert, or whether other groups of pancreatic cells may be concerned in the genesis of diabetes, cannot be definitely stated at present. It has become customary to postulate an internal secretion for the islets, and to make this responsible for the undoubted function of the pancreas in sugar metabolism. However, many cases of diabetes fail to reveal recognized defects in either the islets or the acinary cells, so that final pronouncements are unwarranted.

The general opinion is that sugar continues to be formed in the diabetic, from such precursors as are available, at the usual rate and the usual extent. The defect in the metabolism relates to the subsequent destruction of the sugar. The disproportion between formation or mobilization of carbohydrate and its utilization in the organism is exemplified in the increased content of sugar circulating in the blood. Hyperglycemia is the most characteristic chemical symptom of diabetes. As might be expected, there have been numerous attempts—surely many, many more than the published literature would disclose—to supply the missing “regulator” of sugar combustion; and attention has naturally been centered on the pancreas in this connection. The most significant results thus far recorded have recently been secured in the Department of Physiology at the University of Toronto under the leadership of J. J. R. Macleod.¹ These investigators have prepared products from the pancreas by extraction with alcohol which apparently enable the diabetic animal and man to metabolize sugar better. The evidence lies primarily in the reduction of the hyperglycemia of such patients after ad-

ministration of the suitable pancreatic extracts.

The latest experiments by the Toronto workers² bring the significant evidence that injections of the substance isolated lower the content of sugar in the blood of normal animals as well as those rendered diabetic. Its importance lies in the implication that the action of the active component or pancreatic hormone is a fundamental one in the control of the blood sugar. It is not difficult experimentally to effect a lowering of the blood sugar in a few hours, through high dosage, to a point at which serious symptoms attending the hypoglycemia ensue. These can in turn be combated by administration of glucose, a possibility also demonstrated for the hypoglycemia consequent on extirpation of the liver.

The pancreatic factor apparently does not unfold its characteristic effect in the blood stream itself, for it does not influence the glycolytic power of blood in vitro or the rate of postmortem glycogenolysis in the liver. According to the findings of Hepburn and Latchford³ at Toronto, on the other hand, the influence of the new extract is exerted in the active tissues themselves. At any rate, it has

the ability to increase the consumption of sugar in mammalian muscle, as demonstrated by the rate at which reducing substance disappears from nutrient fluid that has been repeatedly perfused through the surviving heart. The investigators are wisely withholding the product from general use while it is undergoing thorough trial by specially selected experts in metabolic diseases and in properly controlled hospitals.

The history of medicine warns us against undue haste in the acceptance of "specifics" applicable to bodily functions. Nevertheless, scientific progress should always challenge our enthusiasm, and may be excused if it awakens the hopes that spring eternal in the mind of man.—*J. A. M. A.*, Oct. 21, 1922.

¹Banting, F. G.; Best, C. H., and Macleod, J. J. R.: *Am. J. Physiol.* 59: 479, 1922. Banting and Best: *J. Lab. & Clin. Med.* 7: 251, 1922. Banting, Best, Collip, Campbell and Fletcher: *Canadian M. A. J.* 12: 141, 1922.

²Banting, F. G.; Best, C. H.; Collip, J. B.; Macleod, J. J. R. and Noble, E. C.: The Effect of Pancreatic Extract (Insulin) on Normal Rabbits, *Am. J. Physiol.* 62: 162 (Sept.) 1922.

³Hepburn, J., and Latchford, J. K.: Effect of Insulin (Pancreatic Extract) on the Sugar Consumption of the Isolated Surviving Rabbit Heart, *Am. J. Physiol.* 62: 177 (Sept.) 1922.

BOOK REVIEWS

ANIMAL PARASITES AND HUMAN DISEASE
By Asa C. Chandler, M.S., Ph.D., Instructor in Biology, Rice Institute.

This book was written primarily for the general public, on a subject about which there is a popular lack of knowledge. An attempt has been made, as far as possible, to avoid technical phraseology, and to omit any lengthy descriptions and minute differentiations, which would lessen its value to the lay reader.

Special emphasis has been laid on the biological and practical aspects of the subject, and particular attention is paid to the effects of parasites on their human hosts, either directly as parasites or as disease-transmitting agents—to their life histories—to their means of dissemination—and to the proper methods of treatment and prevention. The important facts are made available for the non-scientifically trained person who is interested in human health and its maintenance.

In addition, it is a book of prime importance to physicians, public health officers, and nurses, particularly those engaged in public health work, since it gives them the essential facts concerning parasitic diseases in such a way that the principles underlying their control can be fully understood and intelligently followed out.

As a text or reference book, it is well adapted for courses in parasitology, in the medical and premedical curriculum.

All school officials and school teachers, particularly in rural districts, should have a copy of this book, with its wealth of information of vital importance, on hand for constant reference. 572 pages, 6 by 9, 254 figures. Cloth, \$4.50 postpaid. Published by John Wiley & Sons, Inc., 432 Fourth Avenue, New York. London: Chapman & Hall, Limited; Montreal, Que. Renouf Publishing Company.

OPIATE ADDICTION.—By Edward Huntingdon Williams; 12 mo., 194 pages. The Macmillan Co.

This is a work meriting the highest praise. It is well written, in simple and entertaining style, and the author has in comparatively a few words, quite thoroughly covered his subject.

Drug addiction is something not too well understood in spite of its prevalence. As in the past those who were insane were not looked upon as sick persons, but rather as possessed of devils, so, today there are many even in the medical profession who consider drug addictions merely a vice, a bad habit, which the addict could quit if he would.

That "the term 'opiate addiction' implies a definite pathological condition" is William's conception of view. This is not to say that it is not recognized that opiate addiction is frequently an expression of "dissipation" but that when once established, from whatever cause, a diseased condition, a pathological state, is established, and should be recognized, handled and treated as such. He very properly points out that the opiate addict or the alcoholic is in most instances an individual inherently deficient in nervous stability before his addiction was recognized. Emphasis also is laid upon the need of caution in the administration of narcotics to such predisposed persons.

His discussion of the various methods of treatment for withdrawal and after care are interesting, practical and sane. The work possesses the merit of brevity and terseness and may be recommended not only to those directly engaged in the management and treatment of addicts, but any others who wish a reliable source of information on this subject.

J. W. S.

DISEASE OF THE SKIN.—By Henry B. Hazen, Professor of Dermatology in the Medical Department of Georgetown University; Professor of Dermatology in the Medical Department of Howard University; sometime Assistant in Dermatology in John Hopkins University; member of American Dermatological Association. Second Edition, price \$7.50; the C. V. Mosby Company, St. Louis.

In this volume the author has set forth a purpose to create something most practical and beneficial to the student and the busy practitioner, and this end he has well accomplished. While others have sought to attain this same end, there are none that are so altogether up-to-date, especially as to the accepted etiology of certain common diseases heretofore obscure as to origin, and to some of the newer named rare diseases which are being pointed out more frequently in this country during the latter years.

While some of his text on symptomatology and differential description of fairly common diseases

has been rather brief, for the most part it is to the point and practical. The treatment is particularly good for the amount of space devoted to it. This is probably the best plan for the student as it is easier to obtain, and it helps him to be decisive; furthermore, it prevents harmful experimentation. One feature especially of great value is the number of cautions given by the author to the practitioner.

The illustrations are taken as a rule from good cases, but in some the photography was not good enough to give full merit to each case. The classification of skin diseases laid down in the main as to causation is well taken and probably more nearly correct than any ever given. It also serves for much convenience as to reference.

While this volume is of little value to the dermatologist except for teaching purposes, it eminently serves the purpose for which it is aimed.

H. K.

ENDOCRINE GLANDS AND THE SYMPATHETIC SYSTEM. By P. Lereboullet, P. Harvier, H. Carrion, A. G. Guillaume. Translated by F. Raoul Mason, M.D., Instructor in Pediatrics, New York Post-Graduate Medical School and Hospital, etc., etc., with the collaboration of Daniel R. Ayres, A.B., M.D., Assistant Professor of Gynecology, New York Post-Graduate Medical School and Hospital, etc. 8 vo., 378 pages. Philadelphia and London, J. B. Lippincott Company.

At the present time Endocrinology engages the attention of a large mass of the medical profession and acting as both cause and effect many works have been issued, varying from short monographs dealing with one aspect of only one endocrine organ, to encyclopaedic systems of several volumes. Neither of these extremes meets the wants of the busy doctor, the general practitioner, the man who needs must have readily available, information upon this topic, and to him there is much in this volume that will recommend itself.

The large type and liberal spacing add to the pleasure of reading it.

In quality and mechanical detail it is what is to be expected from its publishers.

THE THYROID GLAND. CLINICS OF GEORGE W. CRILE AND ASSOCIATES. Edited by Amy F. Rowland. 8 vo. with 288 pages and 106 illustrations, Philadelphia and London, W. B. Saunders Company, 1922. Cloth, \$5.00 net.

In his introduction Dr. Crile states in substance that 'the purpose of the series of clinical volumes of which this is the first is to present the present theoroetic and practical viewpoints of his associates and himself—to present the clinic at work. Both theory and practice, therefore, will be con-

stantly subject to revision and possibly reversal of opinion. . . . This is but an ephemeral publication, representing today's viewpoint in this clinic and does not purport to be a textbook or monograph. . . ."

Under the principal points of discussion in the work, he writes: "We now believe that the so-called hyperthyroidism is an intracellular acidosis which is overcome by restoring the normal acid-alkali balance."

"We no longer use hot-water injections, quinin and urea injections, x-ray or radium; but we add to surgical treatment a planned regimen of rest and diet just as if no operation had been performed.

"In view of the surgical results we advise surgical treatment for all cases without regard to the degree of hyperthyroidism."

As a whole, the volume is most interesting and stimulating.

**MEMBERS OF THE TENNESSEE STATE
MEDICAL ASSOCIATION,
FOR 1922.**

Anderson County.

Doctors.	Location
W. L. Carden	Andersonville
J. S. Taylor	Leinort
J. H. Gammon	Coal Creek
J. M. Cox	Coal Creek
W. L. Abell	Briceville
H. D. Hicks	Clinton
S. B. Hall	Clinton
J. S. Hall	Clinton
E. M. Beasley	Coal Creek
R. L. Carter	Edgmore
J. T. Hayes	Oliver Springs
W. H. Eblen	Petros
W. B. Campbell	Coal Creek
C. L. Johnson	Ringgold, Ga.
E. Dickenson	Coal Creek

Bedford County.

T. R. Ray	Shelbyville
J. L. Morton	Shelbyville
G. W. Moody	Shelbyville
W. H. Avery	Shelbyville
S. S. Moody	Shelbyville
W. T. Robinson	Shelbyville
J. H. Dyer	Wartrace
R. E. Shelton	Lynchburg
G. L. Landis	Unionville
J. T. Conditt	Flat Creek
T. J. Coble	Shelbyville
J. P. Taylor	Wartrace
J. W. Sutton	Petersburg
W. C. Kirkland	Shelbyville
M. L. Connell	Wartrace
Ben Burdetts	Shelbyville
Dr. Sewell	Bellbuckle

Blount County.

C. F. Crowder	Maryville
A. M. Gamble	Maryville
J. A. McCulloch	Maryville
J. E. Carson	Maryville
E. L. Ellis	Maryville
R. L. Hyder	Maryville
C. C. Vinsant	Maryville
W. B. Lovingood	Maryville
F. A. Zoller	Maryville
B. E. Delozier	Maryville
J. D. Singleton	Maryville
G. D. Leguire	Maryville
J. W. McMahan	Alcoa
Geo. W. Burchfield	Alcoa
N. C. Ellis	Friendville
S. S. Kittrell	Louisville
Chas. Lane	Greenback
A. J. Isham	Townsend
A. B. McTeer	Rookford
J. S. Tipton	Friendville
J. W. Dennis	Alcoa

Bradley County.

T. E. P. Chambers	Cleveland
T. H. Davis	Cleveland
H. W. Harris	Cleveland
R. O. Kibler	Cleveland
T. J. McKamy	Cleveland
J. L. McKenzie	Cleveland
S. B. North	Cleveland
L. D. Owen	Cleveland
E. A. Quinn	Cleveland
W. H. Schults	Cleveland
C. T. Speck	Cleveland
R. P. Sullivan	Cleveland
W. H. Sullivan	Cleveland
J. M. McIntosh	Knoxville, P. O. Box 1093

Campbell County.

L. M. Scott	Jellico
F. A. McClintock	Newcomb
S. D. Queener	Jaksboro
J. S. Sharp	LaFollette
W. B. Rose	LaFollette
A. L. Lawson	Elk Valley
B. B. Brown	Elk Valley
J. L. Heffernan	Jellico
J. W. L. Cooper	LaFollette
R. L. Galleher	Careyville
G. M. Rogers	Block
U. S. Carden	LaFollette
G. B. Brown	Elk Valley
D. W. Moore	Jellico
W. H. Longmire	Pioneer
J. L. Rose	Jellico
W. N. Jones	Westboume
C. H. Henderson	Eagen
J. P. Lindsey	Pruden
Thomas Jennings	Jellico
J. W. Presley	Morley
Chas. Rogers	LaFollette

Carroll County.

H. T. Collier	McKenzie
J. B. Cox	Huntingdon
Tyler Cox	Westport
A. I. Dennison	McKenzie
E. W. Hillsman	Trezevant
G. H. Berryhill	McKenzie
Marvin Alexander	McKenzie
Harry Alexander	McKenzie
H. D. McGill	Yuma
L. T. Travathan	Hollowrock
V. E. Massey	Huntingdon
A. C. Elinor	McKenzie
R. A. Douglas	Huntingdon
J. H. Williams	McKenzie
Elinor Berryhill	McKenzie
H. D. McGill	Yuma
Wade Huffman	McKenzie

Cocke County.

E. E. Northcutt	Newport
J. F. Stanberry	Newport
L. T. Nease	Newport
C. E. Barnett	Newport
J. E. Hampton	Newport

Coffee County.

J. A. Mitchell	Tullahoma
A. E. Ray	Hillsboro
E. P. Vaughn	Manchester
J. H. Farrar	Tullahoma
R. L. Dossett	Tullahoma

Crockett County.

J. H. Jones	Alamio
S. E. McDonald	Bells
E. S. Hopper	Alamo
Elisha Farrar	Bells

Cumberland County.

E. W. Mitchell	Davidson
W. A. Reed	Crossville
V. L. Lewis	Crossville

Davidson County.

J. T. Altman	Eve Building, Nashville
John A. Gaines	Jackson Bldg., Nashville
George W. Hale	Hitchcock Bldg., Nashville
Hollis E. Johnson	Vanderbilt Hosp., Nashville
H. L. Douglass	Doctors Bldg., Nashville
Charles Brower	Jackson Bldg., Nashville
A. C. Bailey	Jackson Bldg., Nashville
Wm. G. Carnathan	Vanderbilt Hosp., Nashville
E. L. Gleaves	147 6th Ave., N., Nashville
T. A. Leonard	Doctors Bldg., Nashville
J. M. Cullom	4800 Charlotte Ave., Nashville
T. V. Woodring	1201 Broad St., Nashville

G. C. Savage	165 Eighth Ave., N., Nashville	R. L. Dozier	Jackson Bldg., Nashville
Hazel Padgett	Hitchcock Bldg., Nashville	P. G. Morrissey	142 Seventh Ave., N., Nashville
G. W. Halcomb	1416 Ninth Ave., N., Nashville	W. D. Haggard	Doctors Bldg., Nashville
Jack Witherspoon	Doctors Bldg., Nashville	T. A. Whitfield	Jackson Bldg., Nashville
H. K. Alexander	Eighth Ave., N., Nashville	W. A. Oughterson	Doctors Bldg., Nashville
W. A. Horan	Jackson Bldg., Nashville	R. J. Warner	Doctors Bldg., Nashville
R. E. Fort	303 Seventh Ave., N., Nashville	McPheeters Glasgow	Jackson Bldg., Nashville
J. P. Crawford	149 Seventh Ave., N., Nashville	R. A. Harrington	Ind. Life Bldg., Nashville
D. R. Neil	Jackson Bldg., Nashville	W. F. Fessey	Eve Bldg., Nashville
A. L. Erwin	Jackson Bldg., Nashville	Hillard Wood	Ind. Life Bldg., Nashville
Geo. R. White	State Capitol, Nashville	T. W. Dailey	142 Seventh Ave., N., Nashville
B. F. Byrd	303 Seventh Ave., N., Nashville	Joe Minor	Doctors Bldg., Nashville
F. B. Dunklin	Doctors Bldg., Nashville	J. H. Lassiter	Doctors Bldg., Nashville
Frank P. Head	4312 Charlotte Ave., Nashville	Milton Tharp	149 Seventh Ave., N., Nashville
Van Coles	Doctors Bldg., Nashville	C. N. Cowden	Doctors Bldg., Nashville
T. D. McKinney	Doctors Bldg., Nashville	Perry Bromberg	Jackson Bldg., Nashville
W. E. McCampbell	802 Woodland St., Nashville	J. A. Witherspoon	Doctors Bldg., Nashville
John Hall	Eve Bldg., Nashville	George A. Hatcher	Central Hospital, Nashville
T. D. Hall	Eve Bldg., Nashville	Sam Bloomstein	142 Seventh Ave., N., Nashville
W. B. Lee	Jackson Bldg., Nashville	Irving Simons	Hitchcock Bldg., Nashville
T. Hugh Young	Eve Bldg., Nashville	W. S. Farmer	Central Hospital, Nashville
R. W. Billington	180 Eighth Ave., N., Nashville	J. W. Handly	Ind. Life Bldg., Nashville
George F. Tennison	Doctors Bldg., Nashville	T. G. Pollard	Doctors Bldg., Nashville
Murray Davis	City Hospital, Nashville	Herman Spitz	Doctors Bldg., Nashville
George F. Owen	Ancon Hosp., Ancon, Panama	Duncan Eve., Jr.	Eve Bldg., Nashville
J. F. Binkley	151 Seventh Ave., N., Nashville	B. G. Tucker	T. B. Hospital, Nashville
E. L. Roberts	Jackson Bldg., Nashville	J. G. Goodwin	153 Seventh Ave., N., Nashville
George H. Price	Eve Bldg., Nashville	C. F. Anderson	148 Eighth Ave., N., Nashville
J. V. Pace	Benton, Ky.	Olin West	535 N., Dearborn St., Chicago, Ill.
E. L. Bishop	State Board of Health, Nashville	Duncan Eve, Sr.	Eve Bldg., Nashville
M. D. Hartman	172 Eighth Ave., N., Nashville	R. L. Jones	City Hall, Nashville
W. D. Sumpter	155 Eighth Ave., N., Nashville	C. C. Sullivan	155 Eighth Ave., N., Nashville
J. A. Becton	City View Sanatorium, Nashville	C. E. Brush	Doctors Bldg., Nashville
W. A. Bryan	Doctors Bldg., Nashville	R. O. Tucker	142 Seventh Ave., N., Nashville
Bate Dozier	802 Monroe St., Nashville	H. S. Shoulders	149 Seventh Ave., N., Nashville
Joe W. Fenn	Hitchcock Bldg., Nashville	J. M. King	Doctors Bldg., Nashville
E. A. Sayers	Jackson Bldg., Nashville	J. P. Kellar	142 Seventh Ave., N., Nashville
A. B. Jones	State Psychopathic Hosp., Ann Harbor, Mich.	A. M. Forrester	Doctors Bldg., Nashville
J. M. McLaughlin	Murfreesboro Rd., Nashville	H. M. Tigert	142 Seventh Ave., N., Nashville
Gross Long	Eve Bldg., Nashville	E. B. Cayce	Hitchcock Bldg., Nashville
Harlin Tucker	Jackson Bldg., Nashville	W. H. Witt	Doctors Bldg., Nashville
R. B. Harrison	St. Thomas Hosp., Nashville	J. J. Lentz	County Jail, Nashville
W. B. Anderson	Doctors Bldg., Nashville	R. C. Derivaux	Doctors Bldg., Nashville
C. W. Brown	5th Ave., N., & Monroe St., Nashville	J. D. Lester	Jackson Bldg., Nashville
Fred Hasty	Hitchcock Bldg., Nashville	J. R. Tarpley	Doctors Bldg., Nashville
Margaret O. Davis	208 Eighth Ave., S., Nashville	Paul DeWitt	Hitchcock Bldg., Nashville
John Overton	Doctors Bldg., Nashville	C. S. McMurray	180 Eighth Ave., N., Nashville
Chas. G. Duncan	Baylor University, Dallas, Tex.	C. L. Hill	142 Seventh Ave., N., Nashville
Robert Sullivan	Doctors Bldg., Nashville	W. H. Tanksley	155 Eighth Ave., N., Nashville
Larkin Smith	Eighth Ave., N., Nashville	C. C. McClure	Doctors Bldg., Nashville
R. N. Herbert	Hitchcock Bldg., Nashville	Y. W. Haley	Hitchcock Bldg., Nashville
J. F. Gallagher	Jackson Bldg., Nashville	A. W. Harris	Doctors Bldg., Nashville
Robert Caldwell	Jackson Bldg., Nashville	W. M. McCabe	Doctors Bldg., Nashville
C. M. Hamilton	142 7th Ave., N., Nashville	L. E. Burch	Doctors Bldg., Nashville
Herry Morris	Independent Life Bldg., Nashville	O. N. Bryan	Doctors Building, Nashville
J. Henry Litterer	Eve Bldg., Nashville	S. S. Crockett	Jackson Bldg., Nashville
Benjamin Terry	700 Fifth Ave., S., Nashville	D. R. Thomas	Halstead Hosp., Halstead, Kans.
W. O. Floyd	Doctors Bldg., Nashville	S. T. Rose	302 Sixth Ave., N., Nashville
John W. Stevens	Murfreesboro Rd., Nashville	John Ross	302 Sixth Ave., N., Nashville
James J. Vaughn	Doctors Bldg., Nashville	T. A. Sutherland	Madison Station
Alberto Hudson	Jackson Bldg., Nashville	A. S. Keim	Seventh Ave., N., Nashville
W. J. Morrison	159 Eighth Ave., N., Nashville	William Litterer	Second Ave., S., Nashville
M. G. Buckner	Jackson Bldg., Nashville	C. B. Crittenden	State Board of Health, Nashville
Howard King	142 7th., Ave., N., Nashville	Horace C. Gayden	Jackson Bldg., Nashville
Herschel Ezell	Doctors Bldg., Nashville	W. G. Black	1505 Church St., Nashville
Oren A. Oliver	Doctors Bldg., Nashville	L. C. Caldwell	142 Seventh Ave., N., Nashville
J. W. T. Dabbs	Jackson Bldg., Nashville	Louis F. Verdel	404 Commerce Bldg., Nashville
D. T. Kimbrough	2222 State St., Nashville	Harrington Marr	Eve Bldg., Nashville
W. G. Kennon	Doctors Bldg., Nashville	Leon Lanier	Doctors Bldg., Nashville
Eugene Orr	Doctors Bldg., Nashville	H. H. Shoulders	149 Seventh Ave., N., Nashville
John M. Lee	Doctors Bldg., Nashville	W. S. Rude	Watauga Sanatorium, Ridgetop
W. P. Robinson	729 Fourth Ave., S., Nashville	Adam G. Nichol	Jackson Bldg., Nashville
J. Owsley Manier	Doctors Bldg., Nashville	R. Boyd Bogle	Hitchcock Bldg., Nashville
R. A. Barr	Eve Bldg., Nashville	J. W. Maddin	149 Fourth Ave., N., Nashville
Owen H. Wilson	Doctors Bldg., Nashville	J. Q. Owsley	Doctors Bldg., Nashville
Henry M. Cox	Eve Bldg., Nashville	L. W. Edwards	302 Sixth Ave., No., Nashville
W. M. Crockett	Donelson	W. J. Core	302 Sixth Ave., N., Nashville
		C. R. Crutchfield	Doctors Bldg., Nashville

S. C. Cowan ---- 142 Seventh Ave., N., Nashville
 R. W. Dake ---- 216 Seventh Ave., N., Nashville
 John S. Cayce ---- 4800 Charlotte Ave., Nashville
 Sam P. Bailey ---- Jackson Bldg., Nashville
 Robert R. Brown - 142 Seventh Ave., N., Nashville
 H. C. Bilbro, Jr., - 186 Eighth Ave., N., Nashville
 R. K. Landis ---- Jackson Bldg., Nashville
 Jere Caldwell ---- Doctors Bldg., Nashville
 Hugh Barr ---- 151 Seventh Ave., N., Nashville
 E. E. Brown ---- 147 Seventh Ave., N., Nashville
 Bruce P'Poole ---- Doctors Bldg., Nashville
 M. M. Cullom ---- Hitchcock Bldg., Nashville
 J. L. Bryan ---- Hitchcock Bldg., Nashville
 A. E. Douglass ---- 511 Second Ave., S., Nashville
 R. H. Perry ---- Jackson Bldg., Nashville
 A. B. Thach ---- 149 Seventh Ave., N., Nashville
 J. T. Watkins ---- Ind. Life Bldg., Nashville
 W. R. Sifford ---- Ind. Life Bldg., Nashville
 A. L. Sharber ---- Jackson Bldg., Nashville
 W. E. Hibbett ---- City Health Officer, Nashville
 W. E. Reynolds ---- Doctors Bldg., Nashville
 John W. Moore ---- Eve Bldg., Nashville
 S. R. Teachout -- 147 Seventh Ave., N., Nashville
 R. E. Wyatt ---- 805 Monroe St., Nashville
 J. J. Mullowney ----

----- Meharry Medical College, Nashville
 L. Olney Thompson -- Colon Hosp., Colon Panama
 H. Claude Guerin ---- Jackson Bldg., Nashville
 Sumpter Anderson ---- Peck Memorial Hospital, Crown & Albany Sts., Brooklyn, N. Y.
 H. S. Thatcher ---- Bellevue Hospital Pathological Dep't First & 29th St., New York, N. Y.
 J. P. McNeil - Clinchfield Coal Corp., Dante, Va.
 C. W. Friberg -- Sloane Hosp. for Women Columbia University, 447 W. 59th St., New York
 John R. Miller ---- Joelton Tenn.
 W. R. Manlove, Jr., - Jackson Bldg., Nashville
 Sam F. Perkins ---- Lambuth Bldg., Nashville
 P. D. Stout ---- St. Thomas Hospital, Nashville
 Joseph G. Sutton ---- Central Hospital, Nashville
 Amie Sykes ---- Lambuth Bldg., Nashville
 Clarence F. Friedman ----
 ----- Boston City Hospital, Boston Mass.

Decatur County.

J. M. Crider ---- Decaturville
 J. G. McMillan ---- Decaturville
 J. L. McMillan ---- Decaturville
 A. G. Hufstetler ---- Parsons
 J. E. Ingram ---- Parsons
 F. J. Bray ---- Parsons

DeKalb County.

G. M. Allison ---- Smithville
 L. D. Allen ---- Smithville
 M. A. McPhearson ---- Alexandria
 T. J. Bratton ---- Liberty
 T. J. Smith ---- Silverpoint

Dickson County.

W. S. Scott ---- Dickson
 W. W. Walker ---- Dickson
 W. J. Sugg ---- Dickson
 H. Weaver ---- Dickson
 L. F. Loggins ---- Charlotte
 J. E. Guerin ---- Slayden
 G. G. Cannon ---- Cumberland
 R. P. Beasley ---- Dickson

Dyer County.

A. H. Moody ---- Dyersburg
 E. H. Baird ---- Dyersburg
 J. P. Baird ---- Dyersburg
 J. G. Price ---- Dyersburg
 J. B. Berry ---- Dyersburg
 John Cook ---- Jefferson City, Mo.
 N. S. Walker ---- Dyersburg
 B. G. Marr ---- Dyersburg
 J. D. Brewer ---- Dyersburg
 J. W. Wynne ---- Newbern
 E. T. Haskins ---- Newbern

E. O. Cherry ---- Newbern
 D. T. Austin ---- Miston
 T. D. McDougal ---- Finley
 W. G. Shelton ---- Lenox
 R. L. Motley ---- Dyersburg
 C. A. Turner ---- Dyersburg
 J. H. Smith ---- Trimble
 J. A. Fowlkes ---- Dyersburg
 J. A. Ledbetter ---- Heloise
 W. O. Sullivan ---- Newbern
 M. E. Rust ---- Dyersburg
 J. H. Green ---- Trimble
 W. E. Williamson ---- Finley
 Luther Edwards ---- Finley
 J. C. Balthrop ---- Newbern
 R. L. Witherington ---- Trimble
 O. Dulaney -- 666 Frances Bldg., Louisville, Ky.
 J. D. Phillips ---- Bogata

Franklin County.

A. M. Huling ---- Estill Springs
 W. F. Smith ---- Decherd
 G. W. Taylor ---- Decherd
 R. C. Bunch ---- Cowan
 R. M. Kirby-Smith ---- Sewanee
 A. L. Lear ---- Sewanee
 W. B. Sutton ---- Huntland
 L. A. Templeton ---- Huntland
 M. M. Huling ---- Winchester
 John P. Grisard ---- Winchester
 W. E. Murrell ---- Winchester

Gibson County.

W. C. McRee ---- Trenton
 B. T. Bennett ---- Trenton
 G. W. Penn ---- Humboldt
 G. W. Oliver ---- Medina
 W. B. Keeton ---- Medina
 M. D. Ingram ---- Eaton
 B. D. Caldwell ---- Milan
 S. E. Walker ---- U. S. P. H. S. Hospital
 No. 64, 11th & Harrison St., Kansas City, Mo.
 A. J. Skiles ---- Kenton
 John Jackson ---- Dyer
 C. B. A. Turner ---- Dyer
 T. E. Wyatt ---- Yorkville
 W. L. Meddling ---- Dyer
 S. E. Caldwell ---- Milan
 A. A. Donaldson ---- Trenton
 G. C. Bryant ---- Milan
 Sid L. Mackey ---- Bradford
 C. E. Tyree ---- Trenton
 J. W. Oursler ---- Humboldt
 B. S. Penn ---- Humboldt

Giles County.

A. J. Lancaster ---- Pulaski
 R. T. Warren ---- Pulaski
 G. W. Lancaster ---- Pulaski
 C. A. Abernathy ---- Pulaski
 J. K. Blackburn ---- Pulaski
 G. D. Butler ---- Pulaski
 Joe. B. Wright ---- Lynnville
 J. G. Waldrop ---- Lynnville
 A. W. Deane ---- Pulaski
 A. M. Allen ---- Buford
 W. F. Copeland ---- Campbellsville
 L. A. Edmondson ---- Bethel
 W. H. Cale ---- Minor Hill

Greene County.

C. P. Fox ---- Greeneville
 C. P. Fox, Jr. ---- Greeneville
 E. C. Donnold ---- Greeneville
 S. W. Woodyard ---- Greeneville
 Lloyd Dyer ---- Greeneville
 F. C. Britton ---- R. F. D. Greeneville
 J. G. Hawkins ---- Baileyton
 M. A. Blanton ---- Baileyton
 I. B. Brown ---- Mosheim
 Frank A. Fox ---- Greeneville

C. L. Boyd ----- Greenville
 S. F. Brumley ----- Greenville
 H. A. Simpson ----- Route No. 3, Atton
 G. W. Bailey ----- Baileyton
 J. B. Bell ----- Route, Greenville
 W. T. Mathes ----- Greenville
 H. M. Taylor ----- Greenville
 W. M. Brown ----- Hilham

Grundy County.

N. B. Bowden ----- Pelham
 W. P. Stone ----- Tracy City
 D. H. Bryan ----- 2600 20th Ave., Ensley, Ala.
 E. C. Lindsey ----- Tracy City
 W. L. McCaleb ----- Coalmont
 W. A. Jackson ----- Monteagle

Hamblen County.

P. L. Brock ----- Morristown
 P. L. Henderson ----- Morristown
 D. E. Shields ----- Morristown
 J. F. Campbell ----- Morristown
 W. G. Ruble ----- Morristown
 W. E. Howell ----- Morristown
 S. M. Ryburn ----- Morristown
 F. F. Painter ----- Morristown
 L. H. Milligan ----- Morristown
 C. T. Carroll ----- Morristown
 H. G. Pangle ----- Russellville
 Max Henning ----- Exchange Bldg., Memphis
 J. W. Pierce ----- Tate Spring
 J. H. Idol ----- Tate Springs
 O. R. Tomlinson ----- Tate Spring
 G. W. Smithers ----- Rutledge
 B. L. McDonald ----- Idol

Hamilton County.

Edwin B. Anderson -----
 -- Hamilton National Bank Bldg., Chattanooga
 E. H. Adkins -- Volunteer Life Bldg., Chattanooga
 F. B. Bogart -- Erlanger Hospital, Chattanooga
 Elbert C. Broyles ----- Graysville
 G. M. Ellis -- Volunteer Life Bldg., Chattanooga
 E. A. Gilbert ----- James Bldg., Chattanooga
 M. A. Meacham -----
 -- Hamilton National Bank Bldg., Chattanooga
 W. M. Orr ----- Alton Park, Chattanooga
 E. E. Reisman -- Van Deman Bldg., Chattanooga
 J. J. Gee -- 213 1st Nat. Bank Bldg., Chattanooga
 Robt. C. Maddox -----
 -- Volunteer State Life Ins., Co., Chattanooga
 J. A. Smith -- Volunteer Life Bldg., Chattanooga
 S. H. Barrett ----- James Bldg., Chattanooga
 B. C. Hale ----- 500 4th Ave., N., Chattanooga
 Stewart Lawwill -- Flat Iron Bldg., Chattanooga
 Jas. H. Atlee ----- 519 Oak St., Chattanooga
 Leopold Shumacker Volunteer Bldg., Chattanooga
 J. Marsh Fre're -- Volunteer Bldg., Chattanooga
 F. J. Hackney -- Volunteer Bldg., Chattanooga
 L. T. Stem ----- East Lake
 Geo. B. Alder -- Volunteer Bldg., Chattanooga
 C. H. Gurney -- 554 S. Crest Road, Chattanooga
 J. W. Macquillan -----
 -- Hamilton National Bank Bldg., Chattanooga
 J. D. L. McPheeters -----
 -- Volunteer Building, Chattanooga
 John Franklin Johnson -----
 -- Volunteer Building, Chattanooga
 N. S. Ritchie ----- Daisy
 J. H. Barnett -- Volunteer Bldg., Chattanooga
 E. C. Anderson -- 726 1/2 Market St., Chattanooga
 Willard Steele -----
 -- Hamilton National Bank Bldg., Chattanooga
 W. E. Anderson -- James Bldg., Chattanooga
 John Steele -- Volunteer Lift Bldg., Chattanooga
 B. S. Wert ----- 5 East 8th St., Chattanooga
 J. C. Brooks -- Volunteer Lift Bldg., Chattanooga
 T. B. Wise ----- James Bldg., Chattanooga
 G. Victor Williams -- 5 1/2 E. 8th St., Chattanooga
 J. H. Revington, 532 Volunteer Bldg., Chattanooga

H. L. Fancher ----- James Bldg., Chattanooga
 S. I. Yarnell -- 112 1/2 East 7th St., Chattanooga
 A. W. Boyd ----- Loveman Bldg., Chattanooga
 S. S. Marchbanks -----
 -- 532 Volunteer Life Bldg., Chattanooga
 W. L. Nicholls ----- Whitwell
 E. W. Patton -----
 -- Hamilton National Bank Bldg., Chattanooga
 H. M. Purcell -- Volunteer Bldg., Chattanooga
 H. P. Larimore -- Volunteer Bldg., Chattanooga
 J. W. Horton -- James Bldg., Chattanooga
 G. P. Haymore ----- Chattanooga
 Hirman A. Laws -----
 -- Hamilton National Bank Bldg., Chattanooga
 W. E. Vaden ----- St. Elmo
 W. M. Bogart ----- North Chattanooga
 N. J. Minter -- Volunteer Bldg., Chattanooga
 T. E. Abernathy -- Volunteer Bldg., Chattanooga
 J. B. Haskins -- Volunteer Bldg., Chattanooga
 B. L. Jacobs -- Erlanger Hospital, Chattanooga
 Geo. R. West -- Volunteer Bldg., Chattanooga
 J. E. Nelson ----- St. Elmo
 J. C. Cunningham ----- Hixon
 E. T. Newell ----- Chattanooga
 E. D. Newell ----- Chattanooga
 W. H. Cheney ----- Chattanooga
 H. Renner -- 524 Volunteer Bldg., Chattanooga
 S. A. Fowler ----- Chattanooga
 C. Hoftzclaw ----- Chattanooga
 H. H. Hampton ----- Chattanooga
 Jas. E. Green ----- Chattanooga
 H. Quigg Fletcher ----- Chattanooga
 W. W. Dickey -- Volunteer Bldg., Chattanooga
 W. G. Bogart -- 518 Georgia Ave., Chattanooga
 J. McChesney Hogshead -----
 -- Hogshead Apartment, Chattanooga
 J. B. McGee -- 224 1/2 East Main, Chattanooga
 J. W. Johnson -- Volunteer Bldg., Chattanooga
 H. O. Null -- 700 N. Dodds Ave., Chattanooga
 Otis H. Johnson -- Van Deman Bldg., Chattanooga
 W. J. Winter -- Volunteer Bldg., Chattanooga
 Thos. N. Bolin ----- Tyner
 Lyle West -- Volunteer Bldg., Chattanooga
 Fred McIsaacs -- James Bldg., Chattanooga
 E. C. Johnson -- 213 East 8th St., Chattanooga
 Raymond Wallace -----
 -- Hamilton National Bank Bldg., Chattanooga
 F. P. Stapp -- 9 1/2 East 8th St., Chattanooga
 A. W. Boyd -- Loveman Bldg., Chattanooga
 R. O. Curry -- Volunteer Bldg., Chattanooga
 A. E. Goodloe -- James Bldg., Chattanooga
 W. E. Lindsay -- Volunteer Bldg., Chattanooga
 C. A. Skelton -- Cor. Main & Market, Chattanooga
 F. T. Smith ----- 704 Oak St., Chattanooga
 B. F. Travis ----- James Bldg., Chattanooga
 L. B. Brooks -- Van Deman Bldg., Chattanooga
 J. L. Bibb -----
 -- Hamilton National Bank Bldg., Chattanooga
 J. F. Hager ----- Alton Park, via Chattanooga
 L. C. Williamson -- East Lake, via Chattanooga
 Geo. F. Ryan -- Volunteer Bldg., Chattanooga
 G. Madison Roberts Volunteer Bldg., Chattanooga
 S. H. Long -- Volunteer Bldg., Chattanooga
 Rupert M. Colemore, Volunteer Bldg., Chattanooga
 J. M. Webb ----- Ooltewah
 W. A. Applegate, 1300 Pa. Ave., Washington, D. C.
 L. R. Campbell -- 707 Walnut St., Chattanooga
 J. A. Moffitt -- 3915 St. Elmo Ave., Chattanooga

Hardeman County.

H. M. Westover ----- Saulsbury
 A. Y. Alexander ----- Pocahontas
 R. W. Tate ----- Bolivar
 E. W. Cocke ----- Bolivar
 L. Pope ----- Hickory Valley

Hawkins County.

R. A. Doty ----- Rogersville
 J. E. Miller ----- Rogersville

J. S. Lyons ----- Rogersville
 Guy Reecer ----- Rogersville
 T. A. Patton ----- Pressman Home
 J. E. Douglass ----- Pressman Home
 B. F. Horner ----- St. Clair
 John Jones ----- Burem
 W. C. Lyons ----- Surgionsville
 R. D. Keller ----- Persia
 O. M. Sweeney ----- Threadway

Haywood County.

G. T. Scott ----- Brownsville
 T. C. Chapman ----- Brownsville
 E. R. Mulherin ----- Brownsville
 G. G. Mulherin ----- Brownsville
 A. H. Sorrelle ----- Brownsville
 W. R. Miller ----- Brownsville
 J. L. Edwards ----- Brownsville

Henderson County.

E. G. Maxwell ----- Darden
 J. C. Stinson ----- Reagan
 D. W. Bradfield ----- Wildersville
 J. H. England ----- Luray
 R. L. Wylie ----- Scotts Hill
 C. E. Bolen ----- Wildersville
 J. T. Keaton ----- Sardis
 J. F. Goff ----- Chesterfield
 J. W. Hendrix ----- Route 2, Parsons
 E. E. Waller ----- Juno
 M. P. Boyd ----- Yuma
 J. N. Smith ----- Cuba Landing
 R. H. Milam ----- Lexington
 W. F. Huntsman ----- Lexington
 J. T. Powers ----- Lexington
 C. H. Johnson ----- Lexington
 G. A. Brandon ----- Lexington
 J. P. Joyce ----- Lexington
 J. M. Arnold ----- Lexington
 S. T. Parker ----- Lexington
 William I. Howell ----- Wildersville
 S. H. Brazelton ----- Sardis
 James P. Mackey ----- Sardis

Henry County.

W. Q. Hagler ----- Mansfield
 R. J. Perry ----- Springville
 Elroy Scruggs ----- Paris
 C. H. Johnson ----- Paris
 R. A. Grainger ----- Paris
 Edward Plotkin ----- Linden
 Earl Conger ----- Jackson
 M. C. Wiggins ----- Paris
 Geo. McSwain ----- Paris
 J. H. McSwain ----- Paris
 I. A. McSwain ----- Paris
 J. T. Freeman ----- Paris
 A. A. Oliver ----- Paris
 G. T. Abernathy ----- Paris
 O. K. Womack ----- Paris
 A. H. Miller ----- Jackson
 Chas. Hendley ----- Jackson

Hickman County.

W. K. Edwards ----- Centreville
 J. W. Thompson ----- Centreville
 J. S. Beasley ----- Centreville
 C. V. Stephenson ----- Centreville
 J. B. Webb ----- Goodrich
 J. M. Pickard ----- Hohenwald
 W. D. Cagle ----- Lobeville
 A. A. Doyle ----- Little Lot

Jackson County.

N. M. McCoin ----- Gainesboro
 J. D. Quarles ----- Whitleyville
 Louis R. Anderson ----- Gainesboro
 R. C. Gaw ----- Route No. 4, Gainesboro
 C. E. Reeves ----- Gainesboro
 F. O. Cornwell ----- R. F. D., Haydenburg

Jefferson County.

B. M. Tittsworth ----- Jefferson City
 N. M. Dukes ----- Strawberry Plains
 W. R. Cross ----- Dandridge
 W. H. Taylor ----- New Market
 B. C. Cline ----- Strawberry Plains
 J. M. Caldwell ----- Jefferson City
 T. A. Caldwell ----- Dandridge
 W. E. Roberts ----- Talbotts
 P. A. Tinsley ----- Danridge
 T. R. French ----- Dandridge

Knox County.

Lucius D. Hill, Jr., -- W. Church St., Knoxville
 R. V. Depue ----- Walnut St., Knoxville
 W. A. Boise ----- W. Church St., Knoxville
 R. H. Newman ----- Acuff-Young Bldg., Knoxville
 J. Marshall Lea ----- Arnstein Bldg., Knoxville
 E. G. Wood ----- Burwell Bldg., Knoxville
 R. F. McCary ----- Keystone Bldg., Knoxville
 H. L. Carroll ----- Arnstein Bldg., Knoxville
 J. D. Henderson -- Holston Bank Bldg., Knoxville
 J. H. Keeling ----- W. Church St., Knoxville
 V. C. Dail ----- Holston Bank Bldg., Knoxville
 James Monroe Jefferson Van De Griff -----

----- R. F. D., Fountain City
 H. H. McCampbell ----- Walnut St., Knoxville
 J. S. Lyons ----- Gay St., Knoxville
 B. D. Bosworth ----- Empire Bldg., Knoxville
 W. C. McCammon -- Arnstein Bldg., Knoxville
 W. G. Casenburg ----- N. Broadway, Knoxville
 Carl R. Martin ----- Fountain City
 V. I. Smith ----- Knoxville
 C. W. Rain ----- Empire Bldg., Knoxville
 W. A. Greer ----- Walnut St., Knoxville
 Earle Ford ----- Empire Bldg., Knoxville
 J. H. Kincaid ----- W. Church St., Knoxville
 Thos. Ap. R. Jones -- Walnut St., Knoxville
 B. B. Cates ----- W. Church St., Knoxville
 V. D. Holloway ----- Walnut St., Knoxville
 W. S. Nash ----- Walnut St., Knoxville
 E. R. Zemp ----- Walnut St., Knoxville
 E. H. Ford ----- Holston Bank Bldg., Knoxville
 T. P. Miller ----- Walnut St., Knoxville
 G. W. Booker ----- Gay St., Knoxville
 Harley Acuff ----- Gay St., Knoxville
 E. A. Guynes ----- Walnut St., Knoxville
 A. G. Kyle ----- Walnut St., Knoxville
 H. L. Kitts ----- Acuff-Young Bldg., Knoxville
 W. H. L. White ----- Walnut St., Knoxville
 A. R. Garrison ----- Byington
 J. B. Parker ----- Inskip
 H. J. Bowlin ----- Mascot
 S. B. Peters ----- McTownlee Bldg., Knoxville
 W. S. Ogle ----- Brownlow Bldg., Knoxville
 T. F. Fitzgerald ----- R. F. D. No. 1, Knoxville
 R. B. Layman ----- Burwell Bldg., Knoxville
 M. H. Lee ----- Bearden
 B. L. Ogle ----- Holston Bank Bldg., Knoxville
 C. B. Evans ----- Lonsdale Knoxville
 S. D. Acuff ----- 1403 N. Central Ave., Knoxville
 William Delpuech ----- McGee St., Knoxville
 Ralph Monger -- Acuff-Young Bldg., Knoxville
 B. V. Howard ----- W. Church St., Knoxville
 Eugene Abercrombie McTownlee Bldg., Knoxville
 Walter Luttrell -- McTownlee Bldg., Knoxville
 S. F. Casenburg -- McTownlee Bldg., Knoxville
 Andrew Smith ----- Arnstein Bldg., Knoxville
 C. F. Mooney ----- Keystone Bldg., Knoxville
 W. R. Chochrane ----- Walnut St., Knoxville
 H. C. Long ----- W. Church St., Knoxville
 W. W. Potter ----- Arnstein Bldg., Knoxville
 R. M. Young ----- Walnut St., Knoxville
 C. B. Jones ----- Holston Bank Bldg., Knoxville
 A. G. Kern ----- Walnut St., Knoxville
 Oliver W. Hill ----- W. Church St., Knoxville
 L. A. Haun ----- Holston Bank Bldg., Knoxville
 J. P. Tillery ----- Holston Bank Bldg., Knoxville

J. B. Neil ----- McTownlee Bldg., Knoxville
 J. S. Skaggs ----- Birchtown, W. Va.
 G. C. Sumpter ----- Hoop
 Olin Rodgers -- Holston Bank Bldg., Knoxville
 W. P. Wood -- Holston Bank Bldg., Knoxville
 W. A. Shelton ----- W. Church St., Knoxville
 J. J. Greer ----- Walnut St., Knoxville
 R. E. Donnahue ----- Arnstein Bldg., Knoxville
 L. L. Sheddan ----- Burwell Bldg., Knoxville
 F. S. Letellier ----- P. O. Box 53, Knoxville
 J. Q. A. West ----- Arnstein Bldg., Knoxville
 D. H. Williams ----- Walnut St., Knoxville
 H. K. Cunningham -- W. Church St., Knoxville
 Sidney Thompson ----- E. Main St., Humboldt
 S. R. Miller ----- W. Church St., Knoxville
 W. N. Lynn ----- Arnstein Bldg., Knoxville
 C. J. Carmichael ----- Walnut St., Knoxville
 J. T. Barbee -- Holston Bank Bldg., Knoxville
 Vernon Lane ----- Keystone Bldg., Knoxville
 A. L. Rule ----- Arnstein Bldg., Knoxville
 R. E. Lee Smith -- Eastern State Hosp., Bearden
 J. V. Henderson -- Holston Bank Bldg., Knoxville
 J. B. Swafford -- Eastern State Hosp., Knoxville
 W. C. McClain ----- Henson Bldg., Knoxville
 H. T. McClain ----- Henson Bldg., Knoxville
 R. DeWitt MacDonald ----- Gay St., Knoxville
 J. J. Ellis ----- Empire Bldg., Knoxville
 S. H. Hodge ----- Walnut St., Knoxville
 Herbert Acuff ----- Acuff-Young Bldg., Knoxville
 R. L. McReynolds -- Holston Bank Bldg., Knoxville
 W. P. Atchley -- Holston Bank Bldg., Knoxville
 W. T. De Sautelle -----

----- Holston Bank Bldg., Knoxville
 H. E. Christenberry -- W. Church St., Knoxville
 W. S. Austin ----- W. Church St., Knoxville
 B. I. Harrison ----- 705 Market St., Knoxville
 H. J. Kelso ----- W. Church St., Knoxville
 R. P. Oppenheimer -- W. Church St., Knoxville
 Eben Alexander -- Holston Bank Bldg., Knoxville
 W. A. Catlett -- Holston Bank Bldg., Knoxville
 H. L. Peters ----- Gay St., Knoxville
 M. C. Wright ----- Empire Bldg., Knoxville
 M. S. Roberts ----- Arnstein Bldg., Knoxville
 R. G. Reaves -- Acuff-Young Bldg., Knoxville
 W. L. Wallace ----- N. Broadway, Knoxville
 L. O. Blalock ----- Empire Bldg., Knoxville
 G. R. Todd ----- Empire Bldg., Knoxville
 Jesse C. Hill -- Eastern State Hosp., Knoxville
 W. F. Christenberry ----- Lonsdale, Knoxville
 Tom Barry ----- Burwell Bldg., Knoxville
 K. C. Conenhaver -- Burwell Bldg., Knoxville
 M. M. Copenhaver -- Burwell Bldg., Knoxville
 A. B. Peck ----- 733 N. Fourth Ave., Knoxville
 Frank LeRoy Young, Acuff-Young Bldg., Knoxville
 Wm. Bowen ----- Holston Bank Bldg., Knoxville
 C. M. Capps ----- McTownlee Bldg., Knoxville
 J. B. Thielen ----- Holston Bank Bldg., Knoxville
 Robert Patterson -- W. Church St., Knoxville
 H. E. Goetz ----- Walnut St., Knoxville
 Charlie Reaves -- W. Cumberland Ave., Knoxville

Lake County.

J. D. Alexander ----- Tiptonville
 R. W. Griffin ----- Tiptonville
 E. T. Kely ----- Tiptonville
 W. S. Alexander ----- Ridgely
 R. B. Griffin ----- Ridgely
 W. L. Summers ----- Ridgely
 J. A. Jones ----- Wynnburg
 J. F. Griffin ----- Chonchilla, Calif.
 J. A. Crafton ----- Phillippi
 J. Q. Hollifield ----- Tiptonville

Lauderdale County.

W. K. Lackey ----- Ripley
 J. R. Osteen ----- Route 5, Ripley
 J. R. Lewis ----- Ripley
 W. V. Sanford ----- Ripley
 J. W. Sanford ----- Ripley

J. B. Lackey ----- Ripley
 S. M. Glenn ----- Route, Ripley
 C. B. Walker ----- Route 1, Ripley
 T. E. Miller ----- Route 1, Ripley
 C. R. Morrison ----- Red Oak, Okla.
 Wm. Hall ----- Route 3, Curve
 A. P. Massingill ----- Curve
 J. L. Dunavant ----- Route, Henning
 W. C. Sanford ----- Henning
 H. W. Sanford ----- Henning
 R. B. Sanford ----- Route 3, Henning
 Thomas J. Pipkin ----- Henning
 S. T. Chapman ----- Halls
 J. C. Blankinship -----
 ----- St. Mary's Hospital, Hoboken, N. J.
 R. B. Wilson ----- Gates
 J. P. David ----- Cherry
 G. A. Lusk ----- Ripley
 J. R. Conyers ----- Gates
 L. F. Ferguson ----- Gates

Lincoln County.

T. A. Patrick ----- Fayetteville
 W. T. Cannon ----- Fayetteville
 C. L. Goodrich ----- Fayetteville
 J. M. McWilliams ----- Fayetteville
 W. S. Joplin ----- Petersburg
 J. E. Sloan ----- Boonshill
 M. C. Wilson ----- Fayetteville
 E. K. Blair ----- Fayetteville
 J. D. Bryant ----- Fayetteville
 J. M. Anderson ----- Fayetteville
 F. S. McReady ----- Petersburg
 A. G. Hays ----- Coldwater
 J. M. Shelton ----- Kelso
 A. L. Yearwood ----- Fayetteville
 D. M. Goodner ----- Fayetteville
 J. T. Graham ----- Fayetteville
 E. T. Holland ----- Mulberry
 D. T. Hardin ----- R. F. D. No. 2, Ardmore
 J. P. Farrar ----- Route 8, Fayetteville

Loudon County.

J. T. Leiper ----- Lenoir City
 T. J. Hickman ----- Lenoir City
 G. Malcon Hall ----- Lenoir City
 J. J. Harrison ----- Loudon
 Halbert Robinson ----- Loudon
 Arthur Harrison ----- Loudon
 W. D. Paggett ----- Lenoir City
 W. O. Brickell ----- Kizer
 Major Lee Weir ----- Greenback
 Thomas Penland ----- Philadelphia, Pa.

Macon County.

M. H. Allen ----- LaFayette
 D. D. Howser ----- LaFayette
 Patterson East ----- LaFayette
 J. Y. Freeman ----- LaFayette
 W. W. Tucker ----- R. F. D. No. 7, LaFayette
 A. Y. Kirby ----- LaFayette
 H. Clay Hesson ----- Red Boiling Spring
 F. B. Clark ----- Red Boiling Spring

Madison County.

J. L. Crook ----- Jackson
 J. A. Crook ----- Jackson
 Herman Hawkins ----- Jackson
 F. B. Hamilton ----- Jackson
 James L. Fields ----- Jackson
 W. T. Fitts ----- Jackson
 A. B. Dancy ----- Jackson
 A. H. Clark ----- Jackson
 R. L. Greer ----- Oakfield
 J. A. Blackmon ----- Jackson
 Kelly Smythe ----- Bemis
 James W. McClaran ----- Jackson
 O. O. Jones ----- Jackson
 G. F. Jones ----- R. F. D. No. 1, Jackson
 J. M. Curry ----- Mercer
 W. G. Saunders ----- Jackson

R. S. Brown ----- Jackson
G. W. Brasher ----- Springcreek
B. C. Arnold ----- Jackson
John M. Arnold ----- Jackson
H. L. Jones ----- Jackson
J. G. Cottogin ----- Bemis
W. C. Duckworth ----- Jackson
L. L. Webb ----- Carroll
M. E. Siler ----- Mercer

Marion County.

W. R. Irish ----- South Pittsburg
J. W. Kirkpatrick, ----- Richard City
S. N. Anderson ----- South Pittsburg
C. L. Hackworth ----- South Pittsburg
J. A. Price ----- Jasper
W. L. Nichols ----- Whitwell
J. L. Raulston ----- Richard City
G. M. Wampler ----- Whitwell
O. F. McNabb ----- Whitwell

Marshall County.

J. A. Hardison ----- Lewisburg
T. R. Logan ----- Lewisburg
T. E. Reed ----- Lewisburg
J. B. White ----- Lewisburg
S. T. Hardison ----- Lewisburg
C. C. Hardison ----- Lewisburg
C. W. Womack ----- Lewisburg
R. G. Baxter ----- Caney Springs
W. T. Eatherly ----- Chapel Hill
J. W. Reed ----- Belfast
Garrett White ----- Chapel Hill
A. H. Culbertson ----- Chapel Hill
Fred H. Gault ----- Cornersville
C. W. Dickey ----- Cornersville
C. B. Marsh ----- Petersburg
W. T. Sharp ----- Farmington
S. T. Moffitt ----- Cornersville
D. M. Dryden ----- Petersburg
J. G. Waldrop ----- Lewisburg

Maury County.

W. E. Black ----- Columbia
M. A. Beasley ----- Hampshire
B. H. Woodward ----- Springhill
E. M. Ragsdale ----- Santa Fe
C. J. Hurlburt ----- Columbia
L. F. Ragsdale ----- Williamsport
W. K. Shedd ----- Columbia
R. S. Perry ----- Columbia
P. H. Faucett ----- Columbia
Geo. Williamson ----- Columbia
J. W. Wilkes ----- Columbia
J. G. Williamson ----- Columbia
H. A. Gant ----- Columbia
W. E. Martin ----- Columbia
J. S. Covey ----- Glendale
Robt. Pillow, Jr. ----- Columbia
H. O. Anderson ----- Williamsport
W. H. Kittrell ----- Mt. Pleasant
W. R. Webb ----- Hampshire
A. S. Horseley ----- Columbia
J. A. Hardin ----- Springhill
G. C. English ----- Mt. Pleasant
T. B. Brown ----- Columbia
Robt. Pillow, Sr. ----- Columbia
C. D. Nowlin ----- Columbia
P. D. Biddle ----- Columbia
Watt Yeiser ----- Columbia
M. F. Walker ----- Santa Fe
Chas. D. Walton ----- Mt. Pleasant
C. A. Forgey ----- Columbia
C. O. Fowler ----- Springhill
J. H. Jones ----- Mt. Pleasant
T. J. Hardison ----- Carters Creek
O. J. Porter ----- Columbia

McMinn County.

R. A. Brock ----- Athens
G. W. Stanton ----- Athens

Joseph McGahey ----- Niota
J. O. Nichols ----- Etowah
H. F. Taylor ----- Calhoun
W. R. Arrants ----- Athens
J. L. Baisinger ----- Richville
W. S. Moore ----- 1929 Girard Ave., Phila., Pa.
J. L. Prondfoot ----- Athens
D. P. Brendle ----- Englewood
Jas. R. Nankiville ----- Athens
W. R. McCamey ----- Niota
E. C. Kensinger ----- Athens
W. G. Abel ----- Decatur

McNairy County.

W. W. Wallace ----- Selmer
R. M. Kendrick ----- Selmer
J. R. Smith ----- Selmer
H. C. Sanders ----- Selmer
E. M. Smith ----- Bethel Springs
W. M. Barnes ----- Finger
E. G. Sanders ----- Stantonville
J. R. Davis ----- Guys
Thos. A. Kirkland ----- Binghamton
O. C. Doty ----- Savannah

Monroe County.

W. A. Rogers ----- Tellico Plains
J. A. McCollum ----- Vonore
B. W. Bagwell ----- Madisonville

Montgomery County.

J. W. Brandon ----- Clarksville
Geo. Brandon ----- Clarksville
L. L. Neblett ----- Clarksville
M. L. Hughes ----- Clarksville
F. J. Runyon ----- Clarksville
Bryce Runyon ----- Clarksville
Geo. Vaughn ----- Clarksville
I. E. Hunt ----- Route No. 4, Clarksville
Roy Webb ----- St. Bethlehem
Jno. Ross ----- Clarksville
Jno. Ledbetter ----- Clarksville
R. M. Graham ----- Clarksville
H. H. Edmondson ----- Clarksville
M. W. Ellis ----- Clarksville
H. A. Neblett ----- Clarksville
R. B. Macon ----- Clarksville

Obion County.

M. A. Blanton ----- Union City
F. W. Watson ----- Union City
Swan Burrus ----- Woodland Mills
W. F. Roberts ----- Troy
C. C. Marshall ----- Hornbeak
J. L. Roland ----- Obion
E. H. White ----- Rives
Hilar Glover ----- Union City
J. B. Sharpe ----- Obion
P. W. Frather ----- Woodland Mills
Ira Park ----- Union City
T. A. Boswell ----- Troy
H. W. Qualls ----- Union City
L. D. Boaz ----- Harris
M. L. Smith ----- Maceo, Ky.
K. R. Glennan ----- Obion
J. D. Carlton ----- Union City
J. B. Adkerson ----- Union City
J. A. Howard ----- McConnell
C. L. Mulherin ----- Hornbeak

Overton County.

J. D. Capps ----- Livingston
J. W. Davis ----- Windle
J. T. McDonald ----- Nettle Carrier
A. B. Qualls ----- Livingston
W. M. Breeding ----- Livingston
O. H. Moyer ----- R. F. D., Crawford
W. M. Brown ----- Hillham

Polk County.

E. M. Akin ----- Copperhill
T. J. Hicks ----- Copperhill
F. O. Geisler ----- Isabella

W. Y. Gilliam ----- Copperhill
 H. P. Hyde ----- Copperhill
 A. W. Lewis ----- Copperhill
 C. W. Strauss ----- Copperhill
 F. M. Kimsey ----- Ducktown
 L. E. Kimsey ----- Ducktown
 W. W. Kimsey ----- Ducktown
 A. J. Guinn ----- Ducktown

Putman County.

Z. L. Shipley ----- Cookeville
 Lex Dyer ----- Cookeville
 W. A. Howard ----- Cookeville
 J. E. Sidwell ----- Cookeville
 J. S. Trapp ----- R. R. D. No. 8, Sparta
 R. H. Millis ----- Baxter
 W. C. Officer ----- Monterey
 J. T. Moore ----- Algood
 L. M. Freeman ----- Granville
 J. Mac Wheeler ----- Baxter
 L. S. Love ----- Silver Point
 C. P. Martin ----- Cookeville
 Reid Russell ----- Crab Orchard

Rhea County.

Dr. W. P. McDonalds, ----- Spring City
 Dr. W. F. Thomison ----- Dayton
 Dr. J. R. Gillespie ----- Dayton

Rutherford County.

J. T. Harris ----- Water Hill
 J. H. Smith ----- Beech Grove
 J. A. Scott ----- Murfreesboro
 W. T. Robison ----- Murfreesboro
 M. B. Murfree ----- Murfreesboro
 J. C. Overall ----- Murfreesboro
 B. N. White ----- Murfreesboro
 J. R. Gott ----- Murfreesboro
 E. B. Allen ----- Murfreesboro
 A. J. Jamison ----- Murfreesboro
 W. B. McCary ----- Woodbury
 T. M. Smoot ----- Woodbury
 J. F. Adams ----- Bradyville
 D. C. Huff ----- Christiana
 F. C. Hargis ----- Murfreesboro
 J. S. Allen ----- Murfreesboro
 V. S. Campbell ----- Murfreesboro
 A. N. Gordon ----- Fosterville
 J. C. Kelton ----- Lascassas
 J. H. Smith ----- Beech Grove
 J. J. Tucker ----- Overall
 G. W. Crosthwait -- Route No. 2, Murfreesboro
 V. K. Earthman ----- Murfreesboro

Roane County.

J. C. Wilson ----- Rockwood
 Tho. H. Phillips ----- Rockwood
 J. M. Clack ----- Rockwood
 Walter Clack ----- Rockwood
 G. E. Wilson ----- Rockwood
 J. A. Sewell ----- Rockwood
 John Roberts ----- Kingston
 G. P. Zirkle ----- Kingston
 J. J. Waller ----- Oliver Springs
 T. M. McGill ----- Harriman
 Hy. M. Carr ----- Harriman
 E. F. Dodson ----- Harriman
 W. W. Hill ----- Harriman
 J. H. Carr ----- Oakdale
 F. A. Neergaard ----- Harriman
 J. B. Cross ----- Wheat
 Geo. F. St. John ----- Harriman

Robertson County.

W. W. Porter ----- Springfield
 B. F. Fyke ----- Springfield
 R. L. Mathews ----- Springfield
 G. R. Jones ----- Orlanda
 W. W. Winters ----- Greenbrier
 T. L. Johnson ----- Greenbrier
 J. R. Connell ----- Adams
 J. W. Thomas ----- Cross Plains

Jno. S. Freeman ----- Springfield
 W. F. Fyke ----- Springfield

Scott County.

D. T. Chambers ----- Norma
 L. A. Ledford ----- Norma
 M. E. Thompson ----- Oneida
 T. L. Phillips ----- Oneida
 Pitney Phillips ----- Robbins
 W. W. Faust ----- Robbins
 J. I. Foster ----- Huntsville
 D. M. Woodward ----- Winona

Sevier County.

J. W. Ogle ----- Pigeon Forge
 J. W. Rogers ----- Sevierville

Shelby County.

Shields Abernathy -- Exchange Bldg., Memphis
 J. C. Adams -- Bank of Commerce Bldg., Memphis
 W. G. Alford -- New South Memphis, Memphis
 Lynn Anderson -----
 ----- Bank of Commerce Bldg., Memphis
 S. B. Anderson -- Central Bank Bldg. Memphis
 W. S. Anderson -----
 ----- Bank of Commerce Bldg., Memphis
 E. R. Hall ----- Exchange Bldg., Memphis
 J. L. Andrews -- Central Bank Bldg., Memphis
 G. E. Ankerson -- 1622 Exchange Bldg., Memphis
 H. D. Anthony ----- Exchange Bldg., Memphis
 J. C. Ayers ----- 1601 Exchange Bldg., Memphis
 C. O. Bailey ----- Florida & Gage Memphis
 Herbert Barbee ----- Exchange Bldg., Memphis
 J. L. Barton ----- 78 S. Main St., Memphis
 W. H. Batte ----- Trezevant & Lamar, Memphis
 W. L. Bearden -- Goodwyn Inst. Bldg., Memphis
 J. L. Beauchamp -- 614 Seventh St., Memphis
 Chas. A. Bender -- 659 Jackson Ave., Memphis
 Wm. R. Bethea ----- Baptist Hosp., Memphis
 J. M. Biggs ----- 10 Lee Bldg., Memphis
 W. T. Black ----- 620 Exchange Bldg., Memphis
 E. C. Blackburn -- 702 Randolph Bldg., Memphis
 Chas. D. Blasingame -- Exchange Bldg., Memphis
 A. L. Blecker ----- U. & P. Bank Bldg., Memphis
 J. B. Blue ----- 1228 Exchange Bldg., Memphis
 Boccellato ----- 306 Randolph Bldg., Memphis
 J. W. Bodley -- Bank of Commerce Bldg., Memphis
 Leslie T. Bolton ----- Millington
 L. F. Boyd ----- 720 Exchange Bldg., Memphis
 W. T. Braun ----- 814 Exchange Bldg., Memphis
 Major James Brew ----- Marien Hosp., Memphis
 W. A. Brewer -- Goodwyn Institute Bldg., Memphis
 S. N. Brinson -- U. & P. Bank Bldg., Memphis
 K. M. Buck ----- Central Bank Bldg., Memphis
 R. G. Bunting ----- Central Bank Bldg., Memphis
 Selmer Burchart ----- Exchange Bldg., Memphis
 C. C. Burns ----- 61 Porter Bldg., Memphis
 W. B. Burns ----- 61 Porter Bldg., Memphis
 A. P. Bush ----- Exchange Bldg., Memphis
 Gny Campbell -- Central Bank Bldg., Memphis
 W. C. Campbell ----- 869 Madison Ave., Memphis
 W. A. Carnes ----- Randolph Bldg., Memphis
 J. H. Carter -- 1308 U. & P. Bank Bldg., Memphis
 J. P. Carter ----- U. P. Bank Bldg., Memphis
 C. A. Chaffee ----- Cordova
 C. C. Chaffee ----- Brunswick
 L. H. Chapman ----- Exchange Bldg., Memphis
 C. M. Chilton ----- Exchange Bldg., Memphis
 J. C. Clark ----- 1612 Exchange Bldg., Memphis
 J. E. Clark ----- Forrest Hill
 W. F. Clary ----- Exchange Bldg., Memphis
 Joe Clifton -- Bank of Commerce Bldg., Memphis
 W. C. Colbert -- Bank of Commerce Bldg., Memphis
 S. W. Coley ----- Exchange Bldg., Memphis
 Casa Collier ----- Exchange Bldg., Memphis
 H. F. Conley -- Bank of Commerce Bldg., Memphis
 A. F. Cooper -- Bank of Commerce Bldg., Memphis
 G. A. Coors, Jr., -- 293 S., Third St., Memphis
 T. N. Coppedge -- 620 Exchange Bldg., Memphis
 W. R. Cox ----- U. & P. Bank Bldg., Memphis

C. L. Cox	115 N. Main St., Memphis	S. E. Johnson	Bartlett
J. A. Crisler	1605 Exchange Bldg., Memphis	Frank A. Jones	1501 Exchange Bldg., Memphis
J. J. Cullings	Central Bank Bldg., Memphis	Geo. P. Jones	227 McLemore, Memphis
A. B. DeLoach	Exchange Bldg., Memphis	Elizabeth Kane	938 Peabody Ave., Memphis
V. S. Domarce	Goodwyn Institute, Memphis	Max Kaplan	Exchange Bldg., Memphis
R. R. Davenport	Bank of Commerce Building, Memphis	J. H. Karsch	U. & P. Bank Bldg., Memphis
Harry Dickson	1701 Central Bank Bldg Memphis	F. R. Kenton	Exchange Bldg., Memphis
J. L. Dies	Bank of Commerce Bldg., Memphis	D. P. Kincaid	U. & P. Bank Bldg., Memphis
W. T. Dinsmore	Florida & Iowa, Memphis	C. C. King	Exchange Bldg., Memphis
J. R. Drake	Police Station, Memphis	V. D. King	U. & P. Bank Bldg., Memphis
I. G. Duncan	Bank of Commerce Bldg., Memphis	J. W. Kirby	Route No. 4, Memphis
Howard Durley	Whitehaven	A. M. Krall	1502 N. Jefferson St., St. Louis, Mo.
J. J. Durrett	Court House, Memphis	Wm. Krauss	Goodwyn Institute Bldg., Memphis
C. E. Duvall	McLemore & Rayburn, Memphis	G. M. Laten	Exchange Bldg., Memphis
C. W. Edwards	Exchange Bldg., Memphis	W. S. Lawrence	Bank of Commerce Bldg., Memphis
S. L. Edwards	Randolph Bldg., Memphis	Geo. R. Livermore	1308 Exchange Bldg., Memphis
P. D. Elean	Memphis	E. K. Leake	Collierville
E. C. Ellett	Exchange Bldg., Memphis	F. T. Leatherwood	McLemore & Rayburn, Memphis
Sidney Evans	Exchange Bldg., Memphis	J. Gilbert Levy	Central Bank Bldg., Memphis
H. P. Everett	Binghamton	Louis Levy	Bank of Commerce Bldg., Memphis
Robt Fagin	903 Exchange Bldg., Memphis	Louis Leroy	1301 Exchange Bldg., Memphis
P. M. Farrington	1732 Exchange Bldg., Memphis	A. G. Lewis	1224 Exchange Bldg., Memphis
E. Feldman	1984 Thomas St., Memphis	E. J. Lipscomb	Exchange Bldg., Memphis
F. W. Fiedler	1234 Exchange Bldg., Memphis	W. H. Lovejoy	511 S. Parkway, Memphis
J. B. Fisher	Randolph Bldg., Memphis	Battle Malone	Exchange Bldg., Memphis
R. S. Flaniken	R. F. D., Brunswick	F. M. Malone	Capleville
J. S. Fleming	Exchange Bldg., Memphis	Robert Mann	Central Bank Bldg., Memphis
P. J. Flippin	Kerrville	C. H. Marshall	Exchange Bldg., Memphis
B. W. Fontaine	1408 Central Bank Bldg., Memphis	Chas. R. Mason	36 Mallory Ave., Memphis
E. E. Francis	Central Bank Bldg., Memphis	Robin E. Mason	Bank of Commerce Bldg., Memphis
J. E. French	Court Ave., Memphis	J. W. Mason	608 Chelsea Ave., Memphis
David Galloway	Bank of Commerce, Memphis	J. M. Maury	Bank of Commerce Bldg., Memphis
G. B. Gerino	Box 571, Houston, Tex.	Sidney Meeker	Bank of Commerce Bldg., Memphis
George Gartley	Goodwyn Institute Bldg., Memphis	A. H. Meyer	516 Goodwyn Institute Bldg., Memphis
C. H. Glover	Exchange Bldg., Memphis	L. L. Myers	Bank of Commerce Bldg., Memphis
M. Goltman	Bank of Commerce, Bldg., Memphis	E. G. Meriweather	Goodwyn Institute, Memphis
W. H. Gragg	Binghamton	J. S. Miller	Route, Collierville
T. C. Graves	Randolph Bldg., Memphis	H. F. Minor	Bank of Commerce Bldg., Memphis
W. R. Graves	Bank of Commerce Bldg., Memphis	J. L. Minor	Bank of Commerce Bldg., Memphis
Marcus Haase	Exchange Bldg., Memphis	E. C. Mitchell	Vance & Dudley, Memphis
E. R. Hall	Exchange Bldg., Memphis	E. D. Mitchell	Bank of Commerce Building, Memphis
E. C. Ham	Central Bank Bldg., Memphis	F. T. Mitchell	620 Exchange Bldg., Memphis
B. F. Hardin	U. & P. Bank Bldg., Memphis	W. W. Mitchell	1456 Peabody St., Memphis
Cummings Harris	Goodwyn Institute Bldg., Memphis	J. C. Mobley	Randolph Bldg., Memphis
W. R. Harris	Exchange Bldg., Memphis	Alfred Moore	Randolph Bldg., Memphis
L. W. Haskell	715 Bank of Commerce Bldg., Memphis	Moore Moore	Bank of Commerce Bldg., Memphis
R. D. Henderson	Lee Bldg., Memphis	W. P. Moore	Goodwyn Institute Building, Memphis
R. G. Henderson	Exchange Bldg., Memphis	T. R. Montgomery	9 Lee Bldg., Memphis
M. B. Hendrix	Exchange Bldg., Memphis	J. L. Morgan	Central Bank Bldg., Memphis
J. P. Henry	20 S., Dunlap St., Memphis	C. S. Morgan	Exchange Bldg., Memphis
E. B. Herring	Tutwiler Ave., Memphis	J. T. Moss	Lee Bldg., Memphis
J. H. Herring	Goodwyn Institute, Memphis	J. J. McCaughn	Goodwyn Institute Bldg., Memphis
H. G. Hill	859 Madison Ave., Memphis	O. S. McCown	Bank of Commerce Bldg., Memphis
J. F. Hill	920 Exchange Bldg., Memphis	J. B. McElroy	1705 Central Bank Bldg., Memphis
J. J. Hobson	Exchange Bldg., Memphis	R. S. McDavid	Exchange Bldg., Memphis
E. M. Holder	1250 Bank of Commerce Bldg., Memphis	J. L. McGehee	Central Bank Bldg., Memphis
R. W. Hooker	1240 Bank of Commerce Bldg., Memphis	Richmond McKinney	Bank of Commerce Building, Memphis
W. L. Howard	Exchange Bldg., Memphis	A. R. McMahan	Exchange Bldg., Memphis
F. B. Hoover	820 Exchange Bldg., Memphis	J. B. McNulty	1234 Exchange Bldg., Memphis
C. P. Howse	Goodwyn Institute, Memphis	J. A. McQuiston	Brunswick
J. J. Huddleston	U. & P. Bank Bldg., Memphis	J. P. Owens	Exchange Bldg., Memphis
A. G. Hudson	Highland Ave., Memphis	S. E. Parrott	Cordova
J. A. Hughes	Exchange Bldg., Memphis	L. P. Pearce	Collierville
F. L. Husbands	Hollywood Station, Memphis	R. S. Pearce	McCall Bldg., Memphis
T. H. Ingram	Exchange Bldg., Memphis	E. M. Peete	1298 Madison Ave., Memphis
A. G. Jacobs	Central Bank Bldg., Memphis	Percy Perkins	Bank of Commerce Building, Memphis
H. B. Jacobson	Bank of Commerce, Memphis	W. H. Pistole	1300 Exchange Bldg., Memphis
D. H. James	Exchange Bldg., Memphis	L. R. Polk	993 S. Cooper St., Memphis
J. A. James	Exchange Bldg., Memphis	A. R. Porter Jr.	U. & P. Bank Bldg., Memphis
J. L. Jelks	805 U. & P. Bank Bldg., Memphis	J. A. Price	Oakville Mem. Sanitarium, Memphis
E. J. Johnson	1506 Exchange Bldg., Memphis		
Jos. E. Johnson	Exchange Bldg., Memphis		
L. C. Johnson	Lucy		

G. B. Stewart	-- Home for Age & Infirm., Memphis
E. H. Carnes	---- 540 Madison Ave., Memphis
Smith County.	
J. H. Chism	----- Carthage
J. J. Beasley	----- Pleasant Shade
I. H. Beasley	----- Dixon Spring
J. G. Bridges	----- Gordonsville
F. W. Brownfield	----- Bolivar
L. D. Cotten	----- Alexandria
W. B. Dalton	----- Gordonsville
C. H. Davis	----- Lancaster
Rhea E. Garrett	----- Dixon Spring
B. J. High	----- Elmwood
R. E. Key	----- Monoville
A. O. Parker	----- Brush Creek
T. S. Wilson	----- Gordonsville
Sullivan—Carter—Johnson	
Arthur Hooks	----- Bristol
J. C. Hutchinson	----- Crandell
H. P. Hyder	-----
-----	St. Elizabeth's Hosp., Washington, D. C.
Thomas F. Stanley	----- Bristol
W. K. Vance	----- Bristol
J. B. D. Robinson	----- Mountain City
C. W. Fleenor	----- Holston Valley
J. A. Delaney	----- Bristol, Va.
E. S. King	----- Bluff City
W. R. Booher	----- Bristol
N. D. Roberson	----- Cater
W. W. Vaught	----- Shoun
D. A. Swift	----- Mountain City
J. L. Cottrell	----- Elizabethtown
William K. Vance, Jr.,	----- Bristol
J. O. Woods	----- Elizabethtown
George P. Bingham	----- Hickory, N. C.
G. M. Peavler	----- Bristol
J. C. Statzer	----- Blountville
N. S. Peters	----- Bristol
R. T. Childress	----- R. F. D. Kingsport
F. Graves	----- Bluff City
Paul S. Williams	----- Hampton
Arthur B. English	----- Butler
E. Bruce Rhea	----- Shoun
J. T. Campbell	----- Bristol
P. E. Marsh	----- Kingsport
H. S. Smythe	----- Mountain City
Sumner County.	
W. T. Allen	----- Gallatin
C. C. Robbins	----- Gallatin
Homer Reese	----- Gallatin
L. Miller Woodson	----- Gallatin
W. H. Wynne	----- Gallatin
John R. Parker	----- Gallatin
H. M. McLaurine	----- R. F. D., Gallatin
J. H. Stephens	----- Hendersonville
C. C. Fowler	----- Hendersonville
R. N. Buchanan	----- Hendersonville
W. T. Moore	----- Portland
C. N. Donoho	----- Portland
E. F. Peden	----- Portland
J. M. Oliver	----- Portland
T. E. Wright	----- Bethpage
W. W. Roark	----- Bethpage
T. Y. Carter	----- Westmoreland
Humphrey Bate	----- Castalian Springs
James McNeill	----- Mitchellville
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ANGINA PECTORIS.

J. O. MANIER, M. D., NASHVILLE

IN reality angina is not a disease entity in itself but rather the outstanding symptom complex produced possibly by a number of different pathological states. The first accurate clinical description of this condition was furnished the medical world by Heberden in 1768 and since then many theories as regards its underlying pathology have been advanced—Huchard having collected from medical literature as many as sixty-four different explanations. Years ago Jenner advanced the idea that angina was due to coronary disease. While it cannot be denied at the present time that coronary disease is frequently the underlying factor in this condition, on the other hand it is not unusual at autopsy on those who have clinically died of angina to find no evidence of coronary sclerosis or for individuals showing definite pathological evidences of coronary disease to have had during their lifetime no evidence or history of anginal attacks. Allbutt advances the idea that all anginas are but the expression of an existing aortitis except in those instances where an actual thrombosis of the coronary arteries occurs. Mackenzie, however, feels that this condition is more an expression of exhaustion of the heart muscle from any or many causes and that in many instances the condition of the coronary vessels has more bearing upon prognosis than etiology since extensive coronary disease means a poorer blood supply to the heart muscle and hence a heart more easily exhausted by the ordinary stress and

strain of life. According to Lambert "it seems more likely that this symptom complex is due to some morbid condition which sets in motion the sensory-motor arc of the vegetative nervous system involving the mechanism of the heart's action"—the different impulse originated by the underlying pathology, whatever it may be, being carried to the higher centers and appreciated as pain and at the same time causing a great outflow of inhibitory impulses along the vagus, which, if sufficient in amount, may cause cessation of heart action and death.

Whatever the ultimate decision in the etiological controversy may be, Mackenzie's idea of heart exhaustion, whether it represents or not the full explanation of heart pain, at least aids one in approaching the management and prognosis of a case of angina in a rational manner. If the pain in this condition be due to heart exhaustion, then we must search for and remove, if possible, the cause of the condition such as occupation and environment entailing overwork, worry, etc., conditions lowering general vitality as bacterial infections or intoxication from tobacco, actual pathological states of the heart itself as myocardial degeneration, coronary disease, valvular defects and other conditions too numerous to mention.

As regards the actual immediate exciting causes of attacks of heart pain it has long been universally recognized that such factors as overexertion, overeating—especially if fol-

lowed by exercise, emotional disturbances or nervous strain, intoxications such as that arising from the over indulgence in tobacco are of great frequency.

While autopsy findings have not proven beyond doubt the exact cause of angina, at the same time they have shown quite definitely that some one or more of the following pathological conditions is usually present in the majority of individuals dying of this condition—i. e., (1) aortitis; (2) coronary disease; (3) myocardial degeneration; (4) valvular defects; and (5) pericardial adhesions—especially about the root of the aorta.

In striking contrast to the rather wide divergence of views as regards etiology and pathology is the almost universal agreement as regards symptomology and management. The typical case of angina with its suddenly developed, intense substernal pain, vise-like constriction of the chest, sense of impending dissolution, etc., scarcely allows one to go astray. Unfortunately, however, not every case presents the distinctive landmarks of the disease, but often, especially in the early mild attacks that occur at times, the patient's subjective sensations or at least his description of them tends to direct our attention to organs other than the heart. With this in mind it seems not amiss briefly to review the usual symptoms and some of their more common variations. The pain experienced is usually a midline pain, being felt behind the lower sternum, opposite the third and fourth spaces, at the xiphoid or in the region of the epigastrium; it may be poorly marked—at times inconveniencing the patient—or on the other hand most intense and excruciating, and when severe is more likely to be attended by the usual radiation into the left arm and ulnar side of the forearm. However the pain of angina not uncommonly shows great variation in its radiation at times passing into the neck, into the lower back, different parts of the thorax, the abdomen—in which instance it may simulate and be mistaken for abdominal inflammatory conditions, into the right arm or even other more distant parts of the body. To add further confusion the pain may at times begin laterally as in the arm and then subsequently radiate to the thorax. It is not a constant pain but comes in paroxysms or at-

tacks, lasting at times only a few seconds and at others many minutes or even longer, occurring either spontaneously or following exertion, overeating, nervous excitement, etc. The milder attacks when induced by exercise usually subside when the patient stops and rests for a few moments.

Associated with the pain or in many instances actually preceding it is a sense of tightness or vise-like constriction about the chest carrying with it a sense of apprehension or dread and in the more severe attacks a feeling of impending death or dissolution. Mackenzie explains this sensation of constriction as being due to violent contraction of the intercostal muscles resembling that of the abdominal muscles in inflammatory diseases of abdomen.

Strange as it may seem objective dyspnoea is not usually a part of the anginal picture unless actual cardiac decompensation and pulmonary edema are present as well. However, the patient quite commonly experiences a sensation of suffocation, though this is often not sufficiently marked to be mentioned unless brought out by careful questioning.

It can not be too forcibly stressed that the early evidences of angina are often insidious in their development and so described by the patient as to direct one's attention to distant organs such as the gastro-intestinal tract for example. Take for instance the not unusual cases occurring in adults or elderly adults, who begin to experience after a heavy meal—especially when followed by some form of exertion—a sense of heaviness or discomfort “in the stomach” to some degree, at times relieved by the belching of gas or the passage of gas by bowel. Careful questioning will often reveal the fact that the discomfort is not “in the stomach” but in reality behind the lower two inches of the sternum and that associated with it is a sense of tightness or constriction in the chest, a feeling of suffocation and not infrequently a peculiar sense of dread or apprehension. The careless investigator may consider it a simple form of indigestion—probably of dietary origin—and in the event in the future of a more severe attack with more marked abdominal picture, his attention, already focused on the abdomen, be led to the diagnosis of an acute condition of the ab-

domen—such as gall bladder, an appendix, etc. It is not to be doubted that cases of abdominal angina so called have gone to operation and a faulty diagnosis as a result of a superficial history and careless investigation. On the other hand nothing could be more embarrassing to the internist that to overlook the insidious beginning of an angina by making a diagnosis of digestive derangement due to faulty habits of life such as a lack of exercise, and by prescribing the supposed needed exercise to precipitate a violent anginal attack with sudden death. In considering the abdominal aspect of angina it is not without the bounds of reason that many of the rather sudden fatalities at times occurring in apparently previously healthy individuals and ascribed to that rather vague condition "acute indigestion" are in reality the end results of rather severe anginal attacks.

While the history and the subjective sensations of the patient are probably the most important points in diagnosis at the same time there are certain physical findings at the time of the attack which are both of interest and help. In the severe attacks it is quite common to find an area of cutaneous hyperalgesia over the area of pain and at times even its radiation into the arm and forearm, and for some reason this cutaneous hypersensitiveness may persist for sometime after the cessation of the actual pain.

The heart sounds show no distinctive findings though at times the first sound may seem to be shorter and more valvular in type than normal. The pulse may or may not be accelerated, but is often slow and at times irregular. Cases showing considerable acceleration of pulse rate are most commonly those in which actual thrombosis of the coronaries or their branches has occurred.

The systolic blood pressure and especially the pulse pressure may be found abnormally low during an attack and may remain depressed for some time following a really severe attack. By this is not meant to convey the idea that angina does not occur in hypertensive states, but rather that hypertension is by no means an essential for the occurrence of angina and that when present the pressure is not uncommonly reduced during the attack.

Electrocardiographic studies are said to give an almost pathognomonic tracing in cases of angina due to actual coronary thrombosis but in most localities is a point of scientific knowledge rather than practical application.

The prognosis in angina is variable depending in large degree upon the seriousness of the underlying pathology. In general, however, it may be stated that the prognosis is in ratio to the frequency and severity of the attacks, and also to the ease with which they are produced by seemingly trivial causes. Where syphilis is one of the underlying causes the prognosis is usually good provided antiluetic treatment is vigorously pushed, and of course where tobacco intoxication is the outstanding etiology the outlook is unusually good provided the use of tobacco is entirely discontinued.

As regards treatment but little need be said. In the face of a severe attack our first endeavor is to secure relief for the patient and this is usually attained by the use of some of the drugs of the type of nitroglycerine, amyl nitrite, the nitrites or by the use of morphia and atropin. The individual known to have had angina should never be without his nitroglycerine tablets or amyl nitrite pearls as by the prompt use of one of these in the very beginning of an attack he may not only secure early relief from suffering but also abort what might otherwise prove to be a very severe paroxysm. Following an attack at all acute the patient should be kept at rest in bed for a week or longer time and on getting up and around should be instructed and taught always to do things both mentally and physically short of the point occasioning any discomfort whatever. It goes without saying that all forms of overexertion and nervous tension or strain are to be avoided, but in many instances careful adjustment may allow our patient to live in comfort for years and within certain limits to carry on his business or affairs. In all instances the diet should receive careful attention and overeating avoided especially at the time of the evening meal. The use of tobacco must be absolutely prohibited as whether it be the underlying causative factor or not its continued use tends to increase the severity of the at-

tacks and the seriousness of the prognosis in many instances.

In conclusion I would like again to stress that the early and mild manifestations of angina are often quite deceptive and vague and that only by a careful and painstaking history can we arrive at the knowledge of its pres-

ence. In addition its early recognition is all the more important in view of the fact that it is at this stage of the disease that we may so adjust our patient's habits and mode of life that he may live for a variable period of time in comfort and within certain limitations continue his life's work.

EARLY DIAGNOSIS OF SYPHILIS.*

MARCUS HAASE, M. D., AND C. H. MARSHALL, M. D., MEMPHIS.

THE object of this paper is to emphasize the importance of diagnosis of syphilis in the primary stage and to discuss the procedures used in making the diagnosis positive. Although we now believe that the treponemata have progressed well beyond the point of inoculation at the time of the appearance of the chancre and that the term "abortive cure" is no longer to be used, nevertheless, the patient's hope of recovery decreases with every day of delay in his treatment. It would be difficult accurately to estimate the chances of absolute cure in cases treated one, two, three or four weeks after the appearance of the primary sore, but it is safe to say that if treatment is begun before and after the secondary eruption begins, the possibility of cure is as two to one. As the interval lengths and the secondaries become well established or fade away, the ratio becomes greater. By this time, the organisms have become thoroughly disseminated throughout the body and may appear in all the viscera. Foci are then established which can be eradicated only by long continued, vigorous treatment. Pathologists over their autopsy material, sometimes wonder if the organisms are ever entirely destroyed.

The history, age and social standing of the patient and often the appearance of the lesion, are of little value in making a diagnosis. We well remember a patient, age 79, who presented himself with a dime-sized hard ulcer of

the glans penis, together with a bilateral inguinal adenitis. How easy it would have been to make a diagnosis of carcinoma with glandular metastasis in this case. The age of the patient alone, would have ruled out chancre for the observer without a suspicious mind, but treponemata were looked for and found, and other evidences of early syphilis were discovered, which otherwise might easily have been missed.

The typical chancre appearing on the genitalia, three or four weeks after exposure, is an easy lesion to diagnose. However, it is not more than forty per cent of the primary lesions that answer to the common description of a typical chancre, namely, a painless, indurated, eroded papule or nodule. Most frequently, there is an associated infection or the lesion has been traumatised often by a cauterant and the resulting picture is entirely different from the classic Hunterian sore.

Most important of mixed infections is that of the Ducey bacillus and treponemata. Pure uncomplicated chancroids are rare, since seventy to eighty per cent of all chancroids have an associated syphilitic infection. It is of the greatest importance to examine a soft sore frequently, and over a long period of time to be absolutely sure that the treponemata do not present themselves in the lesion and that the patient does not have syphilis. To examine the lesion carefully a number of times over a week or two is not sufficient, even though the sore heals. One may still be within the incubation period of the chancre

*Read before the Tennessee State Medical Association at Memphis, April 13, 1922.

and this much more important lesion will not appear until later, after the doctor has assured himself and the patient that the latter has nothing of importance. When the painless induration appears at the site of the previous lesion, the patient will continue to believe it unimportant and think no more about it.

If the doctor is a very careful man, he will take blood for a Wassermann test. Maybe he will take two, a week apart, to be absolutely sure. Here again, the true nature of the lesion may go on undiagnosed. Craig has given the Wassermann results in a number of cases examined one to five weeks after the appearance of the chancre. At the end of one week, 27.6 per cent were positive; two weeks, 50.8 per cent; three weeks, 62.4 per cent; four weeks, 73.1 per cent; five weeks, 79.4 per cent. Although the Wassermann is our best single procedure in the diagnosis of syphilis, it is obvious from these figures that it cannot be depended upon in early cases.

The best possible proof we can have of the syphilitic nature of a lesion, is to find the *treponema pallida*. And the searching for these organisms in the dark field or by the India ink method is the most important procedure in making a diagnosis of primary syphilis. We may fail occasionally to find them, but in very early cases, when the Wassermann is least liable to be positive, the organisms are most liable to be present.

Preparations from the lesion should be made with as much serum and as little blood as possible. To do this, the surface should be carefully eroded with gauze or a dull curette. Gentle pressure or suction applied to the lesion will increase the flow of serum. If an antiseptic has been used on the lesion, previous to the examination, the organism will not be found. A normal saline solution dressing should then be used for a day or two and another search made. If the organisms are not found at this time, we make it a rule to aspirate one of the neighboring lymph glands and examine a preparation with the dark field. Not infrequently, they can be found here when other examinations have failed.

Just recently, a patient presented himself with a small, recently healed lesion on his

penis, together with enlarged inguinal glands. The lesion had been present about two weeks, healing a few days after its appearance. It is apparent, no preparation could be made from this healed lesion and since there was no other evidence of syphilis present, the only procedure left definitely to prove our diagnosis of early syphilis, was to make a preparation from an inguinal gland and study it for the organisms. A large number of organisms were found, and the true nature of his condition immediately determined. His treatment was begun at once, probably several weeks before the secondaries would have appeared. Had his original diagnosis of chancroid been allowed to stand and the secondaries occurred as a faint roseola, as is often the case, his disease, no doubt, would have gone on unrecognized until some later and more serious manifestation presented itself.

At about the same time the patient just mentioned consulted us, another patient presented himself with a most instructive condition. He had a very extensive scabies, which had been present a number of weeks. Numerous lesions were found on the genitalia. The diagnosis was quite apparent and could easily have been made from the typical burrows on the fingers and wrists, without any further examination. But in carefully studying the lesions on the penis, one pea-sized papule was found to be suspiciously indurated and it had a rather profuse serous discharge from the eroded surface. In fact, it was a typical chancre with many *treponemata* in the serum. This was another example of the frequent association of the two conditions. The man who gets scabies through intercourse with a paramour, is very liable to get syphilis from the same source. Also, a scabetic lesion makes a ready entrance for the *treponemata* at some future exposure, if he should escape the infection the first time. The importance of carefully studying scabetic lesions of the penis, cannot be too frequently emphasized.

The same rule holds true for herpetic lesions, small traumata and other lesions that may occur on the genitalia. In other words, all lesions of the genitalia should be considered syphilitic until proven otherwise.

DISCUSSION:

DR. CARROLL C. TURNER, Memphis: I want to relate my experience in the case the essayist reported to show the importance of recognizing syphilitic lesions, as he has brought out, and of considering all venereal lesions as syphilitic until proven otherwise. This case presented a typical chancroidal ulcer of the penis, with marked phagedena and erosion under the skin. I treated the case for two weeks, after two negative dark fields, when secondaries appeared and the patient's hair began to fall out. I treated the case as one of chancroidal infection; the blood Wassermann came back four plus. I wish to lay stress on the importance of suspecting all venereal lesions as potentially syphilitic.

DR. J. D. HOPPER, Jackson: I am only a country doctor and I have not a laboratory to test these things out. I do not go to the expense of that, but I do go on what I consider a safe plan. I have treated as much syphilis as any doctor in the country or in this state because I practice largely among negroes. They are full of it from the time they get into the world until they pass out, and I always act on the safe side. I treat everything in the way of a chancre or sore on the penis as syphilis, and if I miss it the patient is better off, and I am made no worse by it. I treat these cases from that point of view. I give them the benefit of a doubt. I have no laboratory or microscope to work with. I could not afford to pay a microscopist in connection with the diagnosis and treatment of some of my cases. But I treat these patients with mercury and iodid. Naturally, I give these patients treatment for a year or so, and if I have missed it, they are safe and I am, too.

DR. H. C. SCHMEISSER, Memphis: I should like to call attention to a well-known fact that has just recently been impressed upon me in the Department of Clinical Pathology of our local institution, which works in collaboration with Dr. Haase,

namely, that the dark field illumination seems to be an excellent method of demonstrating spirochetes clinically in the lesions. Of course, that is a well known fact, but it has been urged both in the paper and in the discussion by Dr. Turner that any lesion of the penis should be suspected as being syphilitic and one should hang on to that. That is the point I want to bring out. We may have to make five or six examinations, and just the other day we were rewarded in a case after having made five or six examinations by finding and demonstrating the spirochete conclusively. If we do not get it the first time or the second time, we should continue to make more examinations. Dr. McIntosh worked hard on the case and felt very grateful when he was able to find the spirochete after having made five or six examinations at different intervals.

The dark field illumination seems to be the best method clinically, and our experience has been that you cannot always demonstrate the spirochete at the first examination.

DR. C. H. MARSHALL, Memphis (closing): Everybody realizes how important syphilis is and how widespread it is. If you were to see the great number of cases we have at our clinic, you would realize and have it impressed on you more strongly how many cases there actually are. Not a day goes by without our seeing patients with syphilis who have no knowledge of their infection. If you ask these patients whether they ever had a chancre, they will say they have never had one. When you question them a little further they will often admit that eight or nine years ago they had a soft sore which a doctor had examined and told them that it did not amount to much. The doctor would give them some wash for it, or may be cauterize it, and then discharge them. How much better it would have been to have recognized the true condition at the time and treated these patients properly, thus avoiding the later and more serious manifestations as aortitis, tabes, and other complications. The chancroid is the most important lesion to be differentiated.

THE RESULTS FOLLOWING BELFIELD'S OPERATION IN 101 CASES OF SEMINAL VESICULITIS.*

JOHN E. HALL, M.D. AND J. HENRY LITTERER, M.D., NASHVILLE.

We are reporting the results obtained in this series of cases, not—because we think that this form of treatment is indicated in all cases of seminal vesiculitis, nor that it is infallible, but we have no hesitancy in stating that we regard it as the best method for dealing with a certain class of intractable cases which do not respond to the usual form of treatment advocated for this condition.

When we consider that seminal vesiculitis is one of the most common complications of gonorrhea and practically all men have had this disease with a resultant involvement of the vesicles in fully 75 per cent of all cases becoming chronic, we then realize how prevalent this condition must be. The tendency of vesicular infection is toward chronicity for the reason that the natural drainage of the vesicles through the ejaculatory ducts is very poor, causing a retention of purulent material. Belfield states that the ejaculatory ducts have the function of sphincters and never relax until the vesicles become fully distended. Assuming that this is true, we can understand why, on account of faulty drainage and retention of pus within the vesicles, together with the fact that the ejaculatory ducts are normally closed, preventing medication introduced into the urethra from reaching the seat of infection within the vesicles, that involvement of these sacs must of necessity be a prolonged affair. Since the vesicles are rarely if ever infected without concomitant involvement of the prostate glands and urethra, it follows that these must receive treatment along with the vesicles if one hopes to obtain results from vas injection. We do not intend taking up what this treatment should be, as this is a matter of opinion varying with each physician administering it.

All patients in this series, with the exception of those having epididymitis at the time

of coming to us, and those with acute seminal vesiculitis, resulting in retention of urine, had been under treatment for periods varying from one to several months duration and had shown little or no tendency toward improving under massage and other treatment.

Epididymotomy was performed on those having epididymitis and the vesicles injected, as we believe, like quite a few others, that since the vesicles are always involved before the epididymes, they should be injected at the time epididymotomy is done.

Medication used in this series was solutions of argyrol varying from fifteen to forty per cent. The weaker solution was used in the beginning, as we thought there might be danger of causing chemical inflammation of the vas and epididymis if stronger solutions were injected. The strength of the solution was gradually increased to forty per cent and, while we are unable to state that better results were obtained from the use of the stronger solutions, we may state that there is little or no danger of chemical inflammation of the vas and epididymis, due to regurgitation of the injected solution if, after injection, the syringe is detached from the needle still remaining in the lumen of the vas and ten to fifteen minims of distilled water injected behind the medication. This entirely clears the vas and prevents regurgitation of the silver salt. This of course dilutes the medication within the vesicle, but provision may be made for this by increasing the strength of the solution. Since instituting this method we have never had a single case of chemical funiculitis and epididymitis, whereas, before, these were common occurrences.

TECHNIQUE

We have always found it necessary to make an incision through the skin of the scrotum, isolate and bring the vas through the opening, fix and entirely denude it of all its coverings in order to enter its lumen.

*Read before the Tennessee State Medical Association, Memphis, April 11-13, 1922.

Dr. V. D. Lespinasse, of Chicago, injects by a method he styles "percutaneous puncture of the vas deferens." He says "to insert a needle into the lumen of the vas deferens without making a cut through the scrotal skin demands an exact technique." We heartily agree with Dr. Lespinasse that it does demand an "exact technique," and feel no embarrassment in stating that we have not attained such perfection of technique and are satisfied to be able to enter the lumen of the vas and inject without infiltration when perfectly exposed and stripped of all its coverings.

We have had no hydrocele resulting from this form of treatment, nor do we believe that it causes occlusion of the vasa, as spermatozoa were demonstrable in the seminal secretions of all individuals following vas puncture and injection who showed them prior to operation.

This question is often asked: "If a single injection of the vasa is sufficient to eradicate infection in the seminal vesicles, why does not a similar injection destroy infection in the urethra?" This is a logical question, but if we recall the histological difference between the mucous membrane of the vesicles and that of the urethra, one can appreciate the difference between infection of the vesicle, which has no mucous glands, and that of the urethra which has many, wherein the infecting micro-organisms may remain hidden. In addition, one should recall that the seminal vesicle is a single canal having numerous diverticulae, and when the canal and its diverticulae are completely filled with medication, it is retained within the canal for weeks, whereas when the urethra is injected, medication does not penetrate the ducts of the numerous small glands, thereby coming in contact with the micro-organisms, and is rapidly drained from the urethra. That it does remain for weeks within the vesicles is proved by the fact that not infrequently patients state they have erotic dreams and emissions as long as a month or more after injection, and their night clothes are stained black by the argyrol mixed with the seminal emission.

Only eight patients in this series received more than one injection. Seven of these re-

ceived two each, and the remaining one received three.

Two of the seven given the second, as well as the patient receiving the third, are placed in the class of results listed below as "unimproved." Another of the unimproved has a bi-lateral occlusion of the vasa, but claimed never to have had epididymitis. The vasa were exposed as high as the external rings and several punctures made along their course, but we were unable to inject them.

Our results in this series are as follows:

67 became culturally and microscopically free of infection and clinically cured;

18 showed improvement but still harbored the infection;

9 were unimproved;

7 passed from under observation before sufficient time had elapsed in which to determine the end results.

Not all of these patients were venereals, as nine denied all history of gonorrhea, three of which we are reporting in detail.

The secondary arthritis is the point of interest in the first case.

Case No. 38. A. H., age twenty-six, came to us August 12, 1919. Denied all history of gonorrhea but stated that during December, 1917, while stationed at Camp Gordon, Ga., he developed a non-specific urethritis. Was examined daily by army physicians but no gonococci were found. This urethritis was mild in character and only persisted for about twelve days. A month later, or during January, 1918, he developed an arthritis of right knee-joint which necessitated his being put to bed in a hospital. Stated that the knee was greatly swollen and pain intense. Kept in hospital until August 24, 1918, at which time he was given a disability discharge, in line of duty. He had a recurrence of the urethral discharge twice while in the hospital, but a few irrigations controlled it. On physical examination we found right knee swollen and a bursa immediately below the patella. He was unable to bear his weight on this leg and was forced to walk with a cane. X-ray examination did not show any structural bony changes. Patient would not permit much manipulation of joint on account of pain. Urine contained pus and shreds which, on be-

ing centrifuged, fixed and stained, showed numerous pus cells but no gonococci. Palpation of the prostate and vesicles by rectum showed both vesicles were enlarged and indurated, with no appreciable enlargement of the prostate. Stained secretions from vesicles and prostate showed many pus cells but no organisms. Upon culture for 24 hours, approximately fifty colonies of *B. Coli* were demonstrated. Autogenous vaccines were given him, along with daily irrigations and massage bi-weekly. This line of treatment was continued until November 14, 1919, at which time, as there was no material improvement in his condition, the vesicles were injected with twenty per cent argyrol. He was kept in bed for one week following operation, and then told to report daily at office for urethral treatment. Four weeks after injection we resumed bi-weekly massage of the vesicles and prostate. At this time there was a decided improvement in his knee involvement and he was able to walk without use of a cane. Ninety days following injection, microscopic findings as well as cultures were negative. The end result of this case was complete cure.

The second case was a hematogenous infection of the vesicles, secondary to kidney involvement. The interesting feature in this case was impotence as result of vesiculitis.

Case No. 54. R. G., age twenty-four. Referred to us September 13, 1920, for pyelonephritis. His history was that while a soldier with the 82nd Division serving overseas in 1918, had kidney trouble as a result of exposure and was confined to hospital for six weeks. Had been cystoscoped and kidneys lavaged on various occasions. Cultures from kidneys showed numerous colonies of staphylococcus albus infection which disappeared after the ninth lavage. After the kidney urines cleared up, the voided urine contained many pus cells and shreds. He denied all history of venereal infection, but stated that, for almost a year before coming to us, had been unable to have an erection and had been subjected to great embarrassment and humiliation on three different occasions when attempting it and failing. Prostate and vesicles were found, on palpation, to be enlarged and very tender, and massaged secretions

showed many pus cells with an absence of organisms. Cultures showed approximately 150 colonies of staphylococcus albus. Urethroscopic examination revealed a chronically inflamed verumontanum, about twice its normal size. This was treated with topical applications of silver nitrate through the urethroscope, and the vesicles and prostate massaged twice weekly. He was treated in this manner until January 11, 1921, at which time the verumontanum appeared normal, but there was not much improvement in the condition of the vesicles, so vas injection was given. Microscopic findings sixty days following demonstrated the presence of an occasional pus cell, whereas, on culture, eight or ten colonies of staphylococcus albus were grown. We gave him the second injection and after a period of forty days the massaged secretions failed to show presence of pus, and cultures were negative.

He was ordered not to attempt sexual intercourse for six months, and suggestion was used to the extent of assuring him he would be in as good physical condition as he was prior to his army experience. Our encouragement together with vesicle injection has fully restored him, according to his own version.

The third case comes under the classification enumerated by Thomas and Pancoast (*Annals of Surgery*, Vol. XL) who state: "The seminal vesicles, too often disregarded and neglected, if not forgotten, have not received the consideration which is their due as foci of infection, and in the near future will be their demand, especially at the hands of neurologists, orthopaedists and internists. We refer to a vast array of conditions with a symptom-complex too little understood, as acute and chronic synovitis and arthritis of an infectious and toxic nature, so-called articular or even muscular rheumatism, rheumatoid arthritis, arthritis deformans, gout, hyperthropic arthritis, chronic bladder disturbances, recurrent epididymitis, impotency, renal and cardiac complications, digestive disturbances and an ensemble of mental and nervous manifestations almost incredible of belief."

Case No. 73. R. L. M., age fifty-two. Patient a resident of Knoxville, Tenn. Referred to

us by Dr. E. M. Sanders, of Nashville, Tenn. This patient had been treated for conditions ranging from sciatica to hip-joint disease. For the past two years had been practically an invalid, even being unable to arise from a chair without assistance and requiring the aid of two canes when attempting to walk. He denied all history of venereal infection. Had had a generalized rheumatic condition for the past five years, pains especially severe in lumbar regions and radiating down legs on locomotion. Physical examination revealed a large boggy prostate and indurated vesicles, which were massaged with great pain to the patient. The secretions, upon microscopic examination, showed numerous pus and red blood cells. Many extra-cellular Gram positive bacilli were found on stained smears. Upon culture the organisms were isolated and found to be diptheroid bacillus and staphylococcus pyogenes aureus. Bi-weekly massage along with daily irrigation of permanganate were given over a period of two months, with no apparent improvement in patient's condition, from the microscopic standpoint. A vas injection was then resorted to, with the result that in twenty days a decided improvement in patient's general condition was noted. Microscopic examinations showed a fair amount of pus but disappearance of organisms on direct smear. Cultures, however, were made showing, after twenty-four hours incubation, a few colonies of the same organisms. The second injection of the vas was made forty-five days after the first, with very rapid improvement. The general physical condition was benefitted, with rapid subsidence of all rheumatic pains and he began to walk without the assistance of canes. Ninety days following the second injection the patient returned home. Stained smears at this time did not reveal pus and cultures were negative to all organisms.

SUMMARY

1. Vas injection is indicated in acute seminal vesiculitis, accompanied by urinary symptoms, chief among which is retention, where massage is contra-indicated on account of the acute fulminating process present.

2. In all cases of acute epididymitis where epididymotomy is indicated, vaso-puncture and injection is likewise indicated.

3. All chronic cases of seminal vesiculitis not

responding to massage and other forms of treatment for this condition, should also be injected.

4. Patients manifesting symptoms of joint-involvement with infection of the seminal vesicles improve with this form of medication.

BACTERIOLOGICAL AND SEROLOGICAL FINDINGS, FROM THE DEPARTMENT OF BACTERIOLOGY, PROTESTANT HOSPITAL, NASHVILLE, TENN.

The study of these cases consisted in the determination, when possible, of the offending micro-organism or micro-organisms in each individual under observation. This included the examination of fresh and stained specimens of the expressed contents of the seminal vesicles, the inoculation of material into suitable media, with the isolation and identification of the bacteria present. Blood samples were secured from each patient for the complement fixation reaction.

In obtaining cultures from the seminal vesicles the strictest precautions of asepsis were observed in every instance. The patient was allowed to empty the bladder, after which the urethra was thoroughly irrigated with sterile water, and the bladder then filled and the water retained. Thorough massage of the vesicles with the finger was practiced and as the secretion appeared at the meatus, which was previously rendered sterile by alcohol, smears and cultures were secured. In instances in which no flow was effected, sufficient material was obtained by stripping down the urethra or permitting the patient to pass a small amount of urine into a sterile centrifuge tube, thereby mechanically washing the secretion outward. Concentration was completed by centrifugation.

Smears were made directly on the clean glass slides and stained. The staining method is utilized and valuable in the detection of micro-organisms, their morphology, numbers, and relation to cells. We have employed for this purpose the commonly known Loeffler's alkaline methylene blue stain. As a differential stain, however, the method of Gram was used in every case, this serving to distinguish between the gonococcus which is Gram negative and such non-specific and secondary invaders as epidermidis albus, staphylococcus pyogenes aureus and albus, micrococcus tetragenous, and others which may at times occur in pairs. However, it is of little or no value in differentiating the micrococcus catarrhalis from the gonococcus, since both are diplococci, morphologically similar, and Gram negative. Cultural methods offer the best means for their differentiation. The cultural work was carried out both on plain and special media.

The so frequent occurrence of non-specific and secondary invading organisms encountered in connection with seminal vesiculitis, the latter in particularly long standing infections both with and without histories of a previously existing specific

infection, led us to attempt their isolation first in plain media. This consisted in the inoculations of seminal fluid into melted agar tubes cooled to forty-five degrees centigrade, each tube made more dilute of secretion than the previous, and poured into plates. At varying intervals between twelve and twenty-four hours the growth of these organisms was sufficient to pick and transplant in pure culture for their identification. This method excludes the growth of the gonococcus and such bacteria of rarer encounter as the streptococcus, pneumococcus, etc.

Special medium is employed for the gonococcus, as well as less fastidious bacteria, such as the streptococcus, which appears as a very scanty growth upon plain nutrient agar. This medium does not exclude the growth of the organisms found in non-specific cases and those which commonly invade a previously existing gonorrheal infection. However, the appearance of a characteristic growth peculiar to the gonococcus colony is readily detected in one of the four plates inoculated and diluted in the manner described previously from serum agar.

As a medium well adapted for the cultivation of the gonococcus, serum or blood agar was chosen. Without going into descriptive detail in regard to the preparation of media used suffice it to say that plain agar enriched by blood or other human albuminous fluids (one to three parts) furnishes a food suitable for the growth of the gonococcus. The colonies appear in about twenty-four hours, and are small, grayish-white in color, with, at times, a faint suggestion of a bluish tinge and iridescent. At first they are discrete, later becoming confluent and somewhat slimy. These were similarly isolated by transplantation to tubes in pure culture for identification. In their determination such well known and recognized precedures as their staining properties, cultural characteristics, and reactions to various sugar media were used to advantage.

For the purpose of performing the complement fixation test the patient's blood was drawn in the same manner as for a Wassermann. Without describing the exact technique in detail in this series will state that recognized methods, which, briefly stated, include the use of a polyvalent antigen (fifteen to twenty strains), and the anti-sheep hemolytic system, with other features embodying the same precautions observed in the Wassermann test. On account of the so-called many false positive reactions with the Hecht-Gradwohl test this was not attempted here.

The interpretation of results obtained in the gonorrheal complement fixation test must be borne in mind. Being a test for the presence of antibodies of this specific infection time must necessarily be allowed for the forces of the body fluids to mobilize and [thus manufacture them.] We should, therefore, not expect to find a positive reaction in early cases, whereas a positive reaction

indicates a focus of active gonorrheal infection somewhere in the system, which has persisted for several weeks or more. Cases treated with vaccines, for obvious reasons, cannot with any degree of accuracy be diagnosed by this method. It remains a problem still as to the exact length of time after a cure that a positive gonorrheal complement fixation test is obtained with various individual factors entering into each case. Certainly several months will find the presence of circulating antibodies responsible for the positive reaction, still the secretions be microscopically and culturally free of infection and the patient apparently a clinical cure. Hence this test is an excellent means of diagnosis, but its value as a guide to treatment or cure is limited.

By means of the methods outlined above our results show the presence of the following microorganisms in this series of one hundred and one cases of seminal vasculitis:

1. Gonococcus—sixty-three per cent, of which forty-five per cent was uncomplicated with mixed infection.
2. Staphylococcus pyogenes albus—thirty per cent.
3. Micrococcus catarrhalis—sixteen per cent.
4. Diphtheriod bacillus—nine per cent.
5. Staphylococcus pyogenes aureus—seven per cent.
6. B. coli communis—one per cent.
7. B. proteus vulgaris—one per cent.

DISCUSSION

DR. M. G. SPINGARN, Memphis.—I have listened to this paper with a great deal of interest, and I wish to take issue with the essayists regarding some points. I have had some experience with this operation, but it has not been quite as large as that of the essayists. As to the results of this operation, I do not agree with what has been said. I want to say this, however, that out of fifteen cases I was able to follow very carefully, ten are sterile. Those are my results from this operation. When we look at those statistics we want to be very careful.

In answer to a communication I sent to the urological department of the John Hopkins Clinic, they state they have no place any more for this operation because the percentage of sterility following it is too great. I also received a communication from Dr. Bugbee, of New York, who states that the percentage of sterility following this operation is so great that he does not use the operation any more. I do not expect to do it any more, and I certainly will not recommend others to do it.

DR. JOHN E. HALL (Closing).—I beg to differ with the gentleman who has just spoken, relative to vas injection resulting in sterility in the majority of cases.

In my opinion, if sterility results, it is due to the use of too strong a solution which may cause an acute inflammatory reaction of the vas followed by occlusion of its lumen.

If distilled water is injected behind the medication introduced into the vas one does not have chemical inflammation of the vas deferens, hence there is no likelihood of sterility.

OUR DUTY AND RESPONSIBILITY IN THE FACE OF THE ABORTION EVIL,*

J. C. AYRES, M.D., F.A.C.S., MEMPHIS

THE practice of criminal abortion has existed since time immemorial and while no class of nation or society has been immune it seems to have been more prevalent among the highly civilized nations and the so-called higher classes of society. Estimates by all the authorities state that between one-third and one-sixth of all pregnancies end in expulsion of the embryo before it is viable and that at least one-half of them are criminally induced. It is said that ten thousand babies were fished out of the River Seine in one year. Last year in New York alone there were eighty thousand abortions. The statement has been made that twenty-five premature babies have been found in the streets and alleys of Memphis since the first of the year. Of course we all know that any estimate we are able to make as to the total number of abortions is, from the very nature of things, inaccurate, for there must be thousands of them that no reputable doctor ever sees or hears of and we know that there are many early abortions that go unrecognized.

Every community has its corps of professional abortionists who are known as such by both the laity and the profession; some of them do nothing else; others do a general practice with abortion as a side line; while still others stand well in social and church circles and are members in good standing of our medical societies. In spite of all this crime, and the common knowledge that it is being committed daily, it is practically impossible to bring any of the guilty parties to book. Usually the only witness is the woman and she will invariably refuse to testify. Naturally she does not want the publicity which she would incur. Very often she is deterred from testifying through fear that she would

incriminate herself. Under the Tennessee law, however, the woman if she testifies cannot be prosecuted as an accomplice. Nevertheless this threat is held over her and has caused more than one woman to leave the state rather than testify.

As for using any statement which the patient makes to her doctor—a debatable question of ethics arises. Many hold that information gotten in the course of our professional duty is confidential and should be held inviolate. If we attempted to use this information and the woman forced to go on the stand she would probably swear that she made no such statement or that if she did it was made under duress. In a recent case in this city—with a perforated uterus—the woman made a statement freely and voluntarily in the presence of several witnesses. Upon this evidence the offending party was expelled from the medical society but later the woman signed a letter to the chairman of the Board of Censors in which she repudiated the whole affair. Said she made the statement under the threat of death and while she was doped with ether.

Employing a female detective to obtain the necessary evidence to convict would be futile on account of the language of the statute applying to criminal abortions. The law reads that to constitute a felony it must be shown that the abortion was actually attempted and that the *woman was pregnant at the time the attempt was made*. In other words an attempt to produce abortion upon a nonpregnant woman is not a crime under the Tennessee law. It seems that the only possible way to send any of these fellows to the penitentiary is for some woman to die and while dying and with the full knowledge that she is dying make affidavit before a notary. Even this procedure sometimes fails as was the case several years ago at the Memphis General Hospital when the patient got well,

*Read before the Tennessee State Medical Association at Memphis, April 12, 1922.

slipped out of the hospital one night and was never seen again.

The only white man sent to the penitentiary from this county convicted of performing a criminal abortion in twenty years had a woman die in his office. Even then he might have gotten by if the husband of the dead woman had not pushed the prosecution.

Some of the higher-ups in this line of business are a little more subtle than others, even going to the extent of taking the patients to a hospital and making a fictitious diagnosis to justify a therapeutic abortion or going boldly ahead and escaping punishment if not censure by pleading a mistaken diagnosis. There have been cases of this kind under circumstances so suspicious that the offenders were asked not to bring any more patients to the hospital. Just here I wish to state that the hospitals of Memphis are doing all they can to keep themselves from being defiled by this kind of work.

There are many otherwise good men who, while they could not for any consideration do an abortion, allow themselves to become accessory, morally and legally, before the fact by telling a patron where she can get the work done. Still more of us will promise the woman *beforehand* that if she has the abortion done we will come to her assistance. Of course we are all agreed that we must do what we can, *afterwards*, to save the lives of these women, no matter what the crime, but we should not encourage her in her folly by promising her beforehand that we will protect her from the dangers engendered by her rash act. This would be analagous to a lawyer being retained before the commission of a crime or a priest promising absolution before the commission of a sin.

In a lesser degree of guilt—but guilt nevertheless—are those of our profession who do or consent to the doing of therapeutic abortions on trivial excuses.

While we may not be as extreme, we all admire the principle behind the stand the Roman Catholic Church has taken in this matter. They say we are never justified in doing an abortion, not even to save the life of the mother. They say we are destroying

a human life. Our answer is that we are not destroying a life but choosing which of two lives shall be saved from destruction. That is the only basis upon which we are ever justified in doing an abortion.

As a protection to ourselves and in order to keep our professional reputations above suspicion, we should, when the life of the mother demands it, after consultation with one or more reputable men, go frankly ahead. We should be careful to have all the facts relative to the history, findings and indications written plainly in the record.

In cases of threatened abortion, our duty clearly lies along the line of prevention to the very limit of our resources—in spite of the fact that the patient will very often change doctors on that account. There is a case in the state courts where a doctor was sued for not emptying the uterus on the first visit. It is unbelievable that any judge would ever allow such a case to go to the jury. The startling thing about this case is that at the first trial there was a hung jury—this in spite of the fact every expert testified that the doctor followed the only legitimate course.

Conclusion

1. The statutes relative to criminal abortion should be amended so that it will be possible to convict.
2. Where the evidence is sufficient we should aid the authorities in every way possible.
3. Even where the evidence is not sufficient to convict in a court of law we should, on general information, expel from organized medicine every man who is known to be an abortionist.
4. When therapeutic abortion is necessary the burden of the proof of its necessity should rest upon the doctor performing it. If done in a hospital some member of the staff either resident or visiting should be in consultation on the case.
5. The rule in regard to consultation should be strictly adhered to, not only where there is a question as to the necessity but where there is any doubt as to the diagnosis. Whether we will it or not the medical profession has upon it the responsibility of the

world not only of curing and preventing disease, thereby adding another score of years to the span of human life but to do all in our power to conserve the race. Not only have we fallen short of that duty but we are giving of our skill, our knowledge, our name and our official endorsement to those low creatures who, for a few dirty dollars, jeopardize the life of a woman and murder her unborn child. These fellows ply their nefarious trade brazenly and almost openly but under our wonderful laws, which would rather that ninety and nine red-handed murderers should go free than that one technicality should be overlooked, it is practically impossible to put any of these birds behind the bars. The propagation of kind is the first law of nature and the first law of God—and the willful and persistent violation of that law will, as sure as God lives, bring its retribution in the final destruction of the race.

DISCUSSION.

DR. JOHN WILLIAM SANFORD, Ripley.—I desire to say a few words with reference to abortions. The trouble as I see it comes largely from the class of men who are admitted to our medical schools and graduate therefrom. Many of them are lacking in moral character and standing. A great many of them did not even have a grammar school education before they were admitted to medical school, and yet we have that type of men practicing medicine today. I know of men who are practicing medicine in Tennessee today on the license of other men. I know of men in Tennessee who stole questions in order to pass the state board of examination. Such a state of affairs incriminates our profession when we expect to have men of honor and integrity in it. The man who steals questions in order to get a license to practice is a common thief. That type of men will sell their souls for a few dollars.

It is lack of enforcement of the law that we do not catch these men who are known to commit abortions. Such men have no respect for human life, and yet they are members of the medical profession. In the rural districts we do not have such conditions to contend with as much as you do in the large cities.

I remember one time being called in consultation to empty the uterus, and I told the doctor in attendance there was no reason why that labor could not go on to full term. The woman went to full term and I saved her life by so doing, but I lost two patients by not emptying the uterus before term. Although the Catholic Church says it

ought not to be done, there are times when it has to be done. My consultant in each one of these two cases thought that he could save life, but one died in twenty-four hours, and the other at the end of forty-eight hours.

There is a grave proposition confronting us, and that is to reach this type of men before they get into the medical schools. If they do not have character when they enter the medical schools, they cannot have it after they get through, and if a boy has not got character, he is not fit to make a doctor.

DR. H. L. FANCHER, Chattanooga.—The question Dr. Ayres has brought up in his paper is one of the most important that can come before a medical body in my mind, for the simple reason that it is a community interest; it is not a purely medical subject. There are so many influences that are brought to bear, and like the doctor who has just spoken (Dr. Sanford) said, we must begin away back, and not with the pupils in school, but education must begin with the mother, with the church, and with the girls as they are growing up. There is a lack of regard for the law, and as long as there is a demand for a thing, there will be a certain amount of supply. We could not have any criminal abortionists if the women did not beg and offer money to have abortions done. It does not matter in Chattanooga or any other city whether doctors do abortions or not, they are done. If no doctor did abortions there would be a great many done just the same. The women are wise to it themselves. I venture to say, that one-half of the women I have been called upon to clean up after abortions have produced these abortions themselves or their husbands have done so. The average boy, when he impregnates a girl, goes to the drug store or to a doctor or to the boys in the neighborhood until he finds out something that can be done to help the girl out. It is a question of training. The Catholic Church does a great deal to instill into the minds of mothers and girls the great harm of abortion, the one thing that strikes at the foundation of the home, and it is a condition that concerns people everywhere. Of course, abortion is much more prevalent in cities than in the country, and it is my opinion that public health officers ought to bring this matter before meetings that are held in cities and before school bodies and health organizations, as well as the churches, and teach it to their members. Women's clubs should have this matter presented to them by doctors. If you take up this matter with a great many mothers you will find they will say frankly to you, I do not want to have my daughters go through what I did. The average girl, when ready to get married, has one supreme wish. She does not want to go through the ordeal and responsibility which child-bearing brings. Until we can educate mothers and daughters as to the tre-

mendous evil of abortion, and the great harm it causes to health, we will not accomplish much by fighting each other.

DR. J. D. HOPPER, Jackson.—I want to say a few words on this subject, although I did not hear all of the paper. I am a rural practitioner. I have raised a family, and I want to say that I believe some of us doctors know too much about keeping women from having children. I believe there are many doctors themselves who do not want to raise families. This evil prevails in our own profession. It is in your own minds, and it is not alone in the mind of the layman. It is running through the human race; it is running through the minds of women, through women's clubs, and through the motherhood meetings until they are discussing whether we shall increase the human race or whether we shall decrease it. They are bringing up in motherhood meetings the subject that we should decrease the human race because mothers are not able to take care of the responsibility of having children. They argue that if you do away with conception, the child or children a mother may have will be stronger and better. You know that the French have decreased their race very materially, and they claim it is on account of the fact that they did not have sufficient territory to spread out like the Germans wanted, and we are of the opinion that the French were whipped because they have indulged in race suicide for a hundred years. Race suicide is not only in America, but it is all over the world, and the people who are able to raise children like they ought to raise them do not want to shoulder the responsibility.

These are moral questions that we as doctors ought to stand up for. We ought to believe in families and let nature take its course.

The doctor who preceded me (Dr. Fancher) hit the nail on the head when he said that the younger people are getting a little too wise on the subject. In the olden days, when you talked to grandfathers and grandmothers, some of them would tell you that they had raised twelve or fifteen children to the family. Let us take the statistics of the city of New York, which were compiled about fifteen years ago, showing there was half a baby to the family. The very class of people who ought to be able to raise children do not have them, and there are many of us in these days that are getting into the same shape and class. We do not want to shoulder the responsibility of raising children. We do not want to be troubled with the cries and the belly-aches of the little ones at night, and doctors are just as guilty of not having children in their families as the balance of people. The layman has to go to a doctor if his wife is in trouble, and if he does not get exactly straightforward suggestions of what to do, he knows there are nurses around over the country—and I dislike

to say so—who will commit abortion. I believe that more of these abortions are produced today by trained nurses than by doctors. It is just as easy to know how to do it as it is for them to know how to dress a wound. We have got lots of nurses; we are turning them out by the hundreds every year, and they are doing things which they ought not to do.

DR. DEERING J. ROBERTS, Nashville.—Regarding the statement that abortion is murder, I want to go on record as saying that here is a delicate question for us to answer. The law is very much muddled up by lawyers being in the legislature, who make laws for the benefit of their profession rather than for the people. If we go before the legislature and seek the enactment of the law covering the subject under discussion, immediately the legislators say that it is class legislation we want. It is not. It is a moral question I admit, just as much so as the question of prohibition, but this question needs some legal enactment of the proper kind. Abortion should be classed as **murder** and treated as **murder**. It should be treated as a felony if it can be proven, and the question is how to get a law on the statute books forbidding it and having the law enforced.

I would suggest that at this meeting a committee be appointed to report on the best ideas for the prevention of criminal abortion at the next annual meeting. I would like the members, one from each district of the state, to confer by correspondence and otherwise with those who are interested in this subject. I would like the president to take thirty or sixty days before appointing this committee to find out the men who will take hold of this matter and work it out.

Abortion is sometimes necessary to preserve human life; in other words, to preserve one life in preference to the other, the question being which is the more valuable of the two.

Napoleon is on record as saying, when Maria Theresa was pregnant and the doctors thought she could not give birth to a living child, "Are you certain about this," he said to the doctors. "Yes," was the reply, "it is necessary to terminate the life of the fetus to protect the life of the mother." He said to the doctors, "I want you to think of this case just as if you were dealing with a common peasant in France." We must get this thing right; but it will take time to get some enactment by the legislature which will accomplish what we desire. Abortion can be prevented by thorough investigation and education. Let us have three good men in the state appointed on this committee who will get together and by correspondence and otherwise make a good report at the next meeting of the Association. This report should be considered before the election of officers when there will be a good attendance. This question is one of such im-

portance that it ought to be considered well because it affects so materially the entire citizenship of the world at large.

I wish to close my remarks by classing criminal abortion as murder. But I believe sometimes it is necessary to protect a life in the same way that life is protected by self-defense.

DR. J. A. CRISLER, Memphis.—I wish to second the motion made by Dr. Roberts. I feel this is a question of tremendous importance, and I have thought about it a good deal. Personally, I believe that there ought to be a commission in the several districts of the state, each congressional district, say a committee composed of three or four thoroughly honest doctors, elected by their county or district society. On that committee or that commission there should be one minister of the gospel, and one layman, making a committee of about six (6) to whom a poor, unfortunate woman could appeal for a just and legitimate protection from ruining not alone herself but her mother and probably sisters.

I have in mind right now the case of a young woman, 24 years of age, who became pregnant clandestinely, and who appealed to all the better doctors in town and could not get any relief. It was clear to my mind that this young woman had a splendid conception of the situation in relation to her family. She had four little sisters and a widowed mother, and she was their main dependence. Her ruin would have spelt ruin to the entire family. What are you going to do in a case like that? What happens is this? That woman falls into the hands of a professional abortionist, and there are several in this town who have diplomas which entitle them to practice medicine. There are several abortionists in every town in the United States. These women go to these abortionists and come away crippled, both physically and morally, because a distinct crime has already been com-

mitted. If such a woman could appeal to high class, righteous men, for relief under these conditions, we would have the beginning of the solution of a problem that will never be solved as long as God creates men and women. The holy Christ himself was not entirely adverse to tempering the wind to the shorn lamb. When the righteous people brought a bad woman before Him, most of whom wanted to stone her to death, He said, "He that is without sin, let him cast the first stone." That was a great speech.

This subject cannot be settled by the Tennessee State Medical Association or any other association. It might be settled by Christian men and Christian women, and honest men, by God fearing men who know right from wrong. At any rate, there should be some sort of move made toward the protection of these poor unfortunates and to see that they do not fall into the hands of these abortionists. The wind should be tempered to the shorn lamb somehow.

Dr. J. C. AYERS, Memphis (Closing).—This paper was prepared essentially for physicians and not with any attempt to educate, to instruct, or to reform the public.

I want to differ with Dr. Fancher, who seems to think that the women are the more to blame than the doctors, and before fighting each other we should do something else. In this question of criminal abortion we as representatives of the medical profession should educate the public. The question not infrequently is asked, "Why do you let Dr. So-and-So practice?" The chances are that he is a member in good standing of the Tennessee State Medical Association. The point I want to drive home is that something should be done to rid the medical profession of the criminal abortionist, and when that is done, we can reform the women and children.

THE MANAGEMENT OF THE PERINEUM FOLLOWING LABOR.*

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THE vagina in the normal state is a closed canal, the anterior and posterior walls being in contact. Following labor and as a result of it, should this be converted into a wide open canal, there is bound to follow a train of symptoms that will render the woman a semi-invalid and impair her usefulness and happiness until this condition of affairs is corrected. According to DeLee, "Anatomic study of the pelvic floor after delivery shows evidences of injury to all its structures. The connective tissue is torn in many places, the layers of fascia are loosened, the levator ani lacerated more or less; the urogenital septum is always ruptured, the perineal body frequently, and all the tissues are bruised, showing larger or smaller hemorrhages." Bonney and Berkley state that "in a normal primiparaous labor no amount of skill can prevent a certain degree of rupture of the vulval outlet. The tear in these cases may involve the fourchette only or extend into the perineum proper." Injury to the pelvic floor can not always be prevented even by those who are most skilled and who deliver women under the most favorable circumstances. The most common cause of injury is disproportion between the head of the foetus and the maternal parts. Forceps delivery; disease of the perineum; a rapid second stage; malposition; may be a contributing, or the primary, cause. Lacerations are of two great varieties, the complete and the incomplete. Complete are those that involve the sphincter ani muscle, the incomplete are those that do not involve the sphincter ani. A complete tear rarely occurs except as the results of forceps. The sub varieties are internal, external and combined. The internal lacerations lie wholly within the vagina and unless carefully searched for may be overlooked. The tears outside the

vagina or those that are of a combination of both internal and external are easily seen but are frequently not of as much importance as those within. Another classification of lacerations are those of first, second and third degrees. A first degree tear is one that goes through the fourchette, a second degree is one that extends into the perineal body and the third degree involves the sphincter ani muscle. This last classification, to my mind, is a very poor one, as it naturally inclines one to believe that all tears are external, which is far from correct. A most important variety is the subcutaneous in which there is no laceration of the mucous membrane or skin, but much damage is done to the deeper tissues. It is impossible to detect this injury following labor, except in a small percentage of cases. It does not come within the province of this paper to take up the prevention of injuries to the pelvic outlet. This is well known to all of you and its technique is found in any standard book on obstetrics. Following the third stage a careful examination should be made. To do this a good light is essential and the examination should include inspection, palpation and the use of the speculum. The patient should be brought to the edge of the bed or table and the condition of the external parts carefully noted, then the internal parts are inspected and if any trouble is experienced in obtaining a good view, a Sims speculum should be gently introduced and the anterior vaginal wall retracted. The parts should then be carefully palpated, for it is only by this method that the true condition of the parts may be determined. Any laceration that exists should be carefully sutured at once and in the great majority of cases it can be carried out without anesthesia. There may exist some contraindication to immediate repair, such as profound shock, eclampsia, postpartum hemorrhage or lack of assistants. If the laceration is complete I would advise against its immediate repair,

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unless an anesthetist is at hand, also two assistants and the necessary surroundings and instruments to make a success of the procedure. The object of the primary operation is to prevent sepsis; in complete tears loss of function; to control hemorrhage, and to prevent the vagina, if possible, from becoming in time a wide open canal and the sequelae that are associated with it. Septic infection of any rent is extremely likely for the reason that the tissues have been bruised and their resistance is much lowered; in addition this raw surface is almost compelled to be contaminated by the discharges from rectum, bladder or vagina. Hemorrhage is rarely severe from a laceration but is always easily controlled by sutures that are introduced to close up the rent. I would advise anyone before closing up a complete tear to tell the patient that the operation may not be a success. If this is not done and the sphincter fails to functionate much ill feeling may be engendered against the attending physician.

The details of the technique of closing up lacerations I will not attempt to take up. In my opinion catgut should be used for all of the sutures. Before the sutures are placed it is quite important to bring the parts together with forceps in order to determine that each flap fits back into its normal place. If this precaution is not taken one may find on tying the sutures that the vagina does not assume its normal contour or it may be greatly deformed by suturing a Y shaped tear as a longitudinal one. The suturing should begin at the upper angle of the wound and instead of going transversely across as in the ordinary skin suture it should slant toward the vaginal outlet and go to the bottom of the wound and there brought out and reintroduced at the bottom of the wound on the other side, and then slanting in a direction opposite to vaginal outlet it is brought out opposite the point it entered. By carrying out this technique much more tissue can be grasped in the bite of the suture, the parts are more accurately coaptated and the perineum is pulled up to its normal position. If the internal sutures are carefully placed and according to the methods described it will be unnecessary in many cases to introduce sutures externally,

which is an obvious advantage. Lacerations following labor, as a rule, heal nicely, provided they are accurately sutured, and we can expect union by first intention in from eighty to ninety per cent of cases. It is well to remember, however, that even with a laceration that is accurately sutured and with union by first intention that it will not prevent, in all cases, a relaxation of the vaginal outlet in the course of time. Even if no laceration existed at the time of labor the patient may, in the course of a few months or years, turn up with wide open vagina and the disagreeable symptoms that accompany this condition. This possibility should be explained to every patient who is delivered, for the reason that if it should occur and the patient not made aware of this contingency, it might cause much unjust criticism against the accoucher or perhaps a lawsuit. The closed or normal condition of the vagina is due to the action of the pubo-rectalis portion of the levator ani. This muscle is never ruptured or lacerated at labor except in very badly executed forceps operation. It is, however, frequently overstretched and fails to regain its tone. In other cases an open vagina may be the result of a rupture of the involuntary muscular fibers which run from one pubo-rectalis to the other across the perineum. When these fibers are injured a rectocele is quite likely to occur, for it is by their action that the rectum is prevented from bulging up into the vagina. The textbooks on obstetrics lay a great deal of stress on rupture of the levator ani. I have never seen this rupture in a recent tear and I have always been able at operation to demonstrate the muscle intact in old lacerations. I laid great stress on this particular point in an article that I published in *Surgery, Gynecology and Obstetrics* of October, 1921, and arrived at the conclusion that the obstetrician was not responsible for a relaxed vaginal outlet.

In conclusion I desire to emphasize the following points:

1. All lacerations of the perineum should be repaired immediately after the receipt of the injury, for the purpose of preventing sepsis; a tender scar; and to restore the parts to their normal condition.

2. A proper operation following labor will not always prevent a relaxed vaginal outlet.

3. A relaxation of the vaginal outlet may follow a delivery in which no preceptible injury occurred at the time of the delivery.

4. A wide open vagina after delivery is not due to a rupture of the levator ani, but

to an overstretching of this muscle and a failure to regain its tone. For this reason the obstetrician should not be held responsible for the occurrence of this condition.

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SOME THINGS EVERY PHYSICIAN SHOULD KNOW ABOUT THE ETIOLOGY AND PREVENTION OF MASTOIDITIS.

ARCHIBALD CAREY LEWIS, M.D., F.A.C.S., MEMPHIS.

THE fact that mastoiditis is a serious and a dangerous disease is well known to every man of medicine.

The layman of ordinary intelligence has a wholesome respect for it. Even he realizes the necessity of prompt action in these cases, if he would avoid the expenses and the sorrows of a funeral.

While mastoiditis is not altogether a preventable disease, still it closely approximates it. At the present time it is much less common than it formerly was. This improvement is largely due to education of the public through the physicians, the schools, and the press to the importance of a normal nose with unobstructed nasal breathing. Education also to the real dangers of adenoids and diseased tonsils. These not only act as mechanical obstructions to free aeration of the Eustachian tubes and middle ear cavities, but they keep up a congestion in and around these tubes and afford a constant source of infection.

This condition then furnishes both the predisposing and the exciting cause of middle ear disease. It interferes with the drainage and recovery of both the acute and the chronic middle ear infections.

Mastoiditis occurs in middle ear infections or follows them.

Notwithstanding this improvement in the frequency of mastoid disease, it still occurs far too often and in many cases where it could easily be avoided.

In middle ear infections the invasion is from the naso-pharynx via the Eustachian tubes. This is apt to occur in any acute infection of the nose or throat whether it be a rhinitis, a sinusitis, a tonsillitis or accompanying one of the acute infectious diseases.

The invading micro-organism is variable. It may be a pure strain, or a mixture of a number of different organisms. Regardless of the character of the infection and of the exciting cause, the occurrence of mastoiditis is comparatively rare in those cases which have hitherto had a normal nose and throat. Where a chronic predisposing cause exists in the form of an obstructed nose (whether this obstruction be due to adenoids, a thick and deflected nasal septum, mucous polypi, enlarged turbinate bodies, or the secretions from diseased nasal sinuses), the likelihood of middle ear and mastoid disturbances during an acute nose and throat infection is tremendously increased.

The large, hypertrophied tonsils or the smaller pus-filled ones, are other important predisposing factors that should not be overlooked nor neglected.

The prevention of mastoiditis requires more than the correction of pathology in the nose and throat, which we have stated is the common cause of middle ear infection. When middle ear infection occurs it is of paramount importance that the drum membrane be opened without delay. By establishing and maintaining free and uninterrupted drainage here a mastoiditis is usually avoided. The

pus is not then forced back into the mastoid cells and held there under pressure, as would be the case with a closed drum membrane.

Paracentesis of the drum-head is a simple operation and quite safe when carefully done. The opening made closes quickly and leaves a normal ear. Don't wait for the membrane to break and thereby subject your patient to prolonged suffering and the danger of mastoiditis and its more dangerous complications. The most serious of these are brain abscess, meningitis and sinus thrombosis—all exceedingly grave and of high mortality.

In many cases mastoiditis develops before the ear drum breaks; in others the drum membrane is so badly lacerated when it ruptures spontaneously, that its usefulness is permanently destroyed and the hearing correspondingly impaired.

The symptoms and diagnosis of mastoiditis are not within the scope of this paper, but I must digress far enough to give this warning:

Don't expect, or wait for, the classical, textbook symptoms of mastoiditis to develop before becoming alarmed. In many cases no definite symptoms are present. A brief report of a few cases of this kind encountered recently will serve to emphasize this point.

Case 1. Dr. W. A. G. age 35, came to my office on February 8, 1922, with a swelling behind the right ear of four days duration. History of ear abscess two months before with free discharge for a few days only. No trouble in ear since. Examination shows normal ear drum, normal Eustachian tubes and normal hearing, normal temperature, pulse and respiration; no pain or discomfort. There was no inflammation of the soft tissues behind the ear and only slight tenderness on deep pressure. Blood examination negative but a skiagram of the mastoid region showed bony necrosis. February 10, mastoid was opened under ether; the cells were filled with pus and all the bone over them was soft and necrotic. He made an uneventful recovery and left the hospital on the fourth day.

Case 2, Mrs. H. D. H., age 31, was brought to the Baptist Hospital on February 22, 1922, with pain in temples, back of neck and shoul-

ders. Had been laid up with influenza for two weeks with heavy discharge of pus from nose. Both ears discharging pus for ten days. Examination: Temperature, pulse and respiration normal. Tenderness on pressure over each mastoid antrum. Blood and urinalysis negative. Nose and ear irrigations used at frequent intervals and ice packs kept to both mastoid regions. On March 7, 1922, she was strong enough to return to her home in Mississippi. The right ear still had a scanty discharge but the left was dry. She was instructed to irrigate the right ear t.i.d. and to return to Memphis if it gave trouble.

Three weeks later (March 27) she returned to the hospital with severe pain and tenderness over right mastoid of three days duration. Ear had never ceased to discharge pus. On opening the mastoid all the cells were found destroyed, only a large cavity filled with pus remaining. She made an uneventful recovery and returned home on the twelfth day. Her temperature, pulse and respiration ran normal courses throughout and her white blood count never exceeded 7,000.

Case 3. W. T. B., age fourteen, admitted to Baptist Hospital on August 22, 1922, with edema of right eyelids; (duration one day) stiffness of jaw (four days) and pain in shoulder and back (two days). No pain, tenderness, swelling or inflammation over mastoid. Had a middle ear abscess on right side ten days ago, but ear has been dry and painless for five days. Had a running ear several years ago of long duration.

Examination showed no pathologic condition in the middle ear or Eustachian tube. Temperature, pulse and respiration and blood count normal. The x-ray showed a cloudiness over the right mastoid region, thought to be due to an old mastoid infection. The mastoid was opened at once and a most unexpected condition found. The mastoid antrum was clear and entirely free of pus. No true mastoid cells were found. The bone was very thick and dense throughout. Finally, when we were almost ready to abandon the search for pus, we encountered a small necrotic area far down on the lateral sinus near the jugular bulb. No true pus was seen. The pain and stiffness in his jaw and back,

and the edema of the eyelids gradually cleared up and he was discharged in good condition after two weeks' time.

Analysis of these cases will show an absence of many of the cardinal symptoms of acute mastoiditis that we usually look for. We find in all of them an absence of one or more of the following common symptoms; pain, tenderness, swelling, fever, leucocytosis, and even an absence of middle ear disease in two of them. All of which goes to show that mastoiditis can be easily overlooked.

SUMMARY

1. Mastoiditis is to a large extent a preventable disease.

2. Mastoiditis is caused by middle ear infection and can usually be avoided by early paracentesis and free drainage.

3. Middle ear infection comes from the nose and throat and is apt to occur when there are pathologic conditions in these organs.

4. Correction of all pathologic conditions in the nose and throat whether obstruction, or infection, is the best insurance against middle ear infection and mastoiditis.

5. In mastoiditis an ounce of prevention is worth a pound of cure. The value of prophylaxis here cannot be over-estimated.

VARIOUS PHASES OF ENDOCRINE CONDITIONS.*

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IN presenting a paper on endocrine condition, I will necessarily have to be brief to bring out even the principal points of interest brought about by the hypo and hyperactivity of the glands of internal secretion.

A quotation from Dr. Samuel Johnson, "If no use be made of the labors of past ages the world must always remain in the infancy of knowledge," applies well to the study of medicine in general, and certainly to the subject of endocrine conditions.

The condition brought about by the perverted action of the thyroid is too familiar to need mention, but the hypo and hyperactivity of other ductless glands is just as intricate and interesting.

The pituitary, pineal, thymus, ovary and other ductless glands are attracting much attention. The pituitary gland is divided into two parts, the anterior and posterior lobes, giving no especial attention to the pars intermedia. The anterior lobe is now considered as concerned particularly with the osseous and genital development, and there is essentially a difference in this influence before and after puberty. If this lobe is deficient before

puberty the picture is one of under development of the osseous and genital system, in other words a type of infantilism of the Lorrain-Levi character, after adolescence when the osseous and primary sexual development is complete the deficiency of the anterior lobe is reflected in a physiological way, such as amenorrhea, dysmenorrhea, loss of libido, etc. If the anterior lobe is hyperactive before puberty the picture should be over-development of the osseous and genital system or one of gigantism an over-development of long bones, with abnormal height, frequently abnormal primary sex characteristics, but more particularly in the physiological sphere, increased libido. Should this hypersecretion occur after puberty, when the epiphyses have been closed, supposedly by the gonadal secretion, then it is no longer possible for an increased stimulation of long bone development, and the effect is exerted particularly in the short and flat bones, resulting in the clinical picture of acromegaly.

The posterior lobe is deemed particularly concerned with the carbohydrate metabolism, which when perverted gives the characteristic girdle obesity which begins at the waist line

*Read before the Middle Tennessee Medical Association at Murfreesboro, Nov. 9-10, 1922.

and extends down to the juncture of the middle and lower portions of the thigh. See Fig. 1.

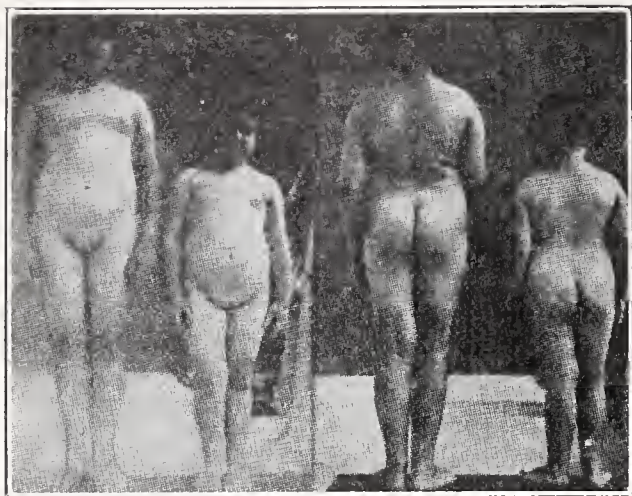


FIGURE I.

Classical hypopituitarism at ages six and ten. The mother was a classical case of bilobar hypopituitarism (Frolich's Disease). Both of these cases were free from thyroid history, markings or mental signs. Compare with figure 2 showing pituitary adiposity engrafted upon hypothyroidism (Drs. Englebach and Tierney).



FIGURE II.

The secondary effect of importance is that of the vascular tonicity and smooth uterine musculature, with which we are all familiar. Hyperactivity of the posterior lobe is indis-

ting clinical, and needs no special consideration.

If both lobes are insufficient the natural picture should be the combined effect, as undevelopment of osseous and genital system, brought about by deficiency of anterior lobe, and obesity brought about by deficiency of posterior lobe, or bilobar pituitary insufficiency or Frolich's disease, also termed dystrophia adiposogenitalis. See Fig. 3.



FIGURE III.

Fig. 3. Bilobar hypopituitarism, age 13. Note the classical adiposity and aplasia of the genitals (The mammary adiposity is more marked in these cases in which the anterior lobe is insufficient) (Drs. Englebach and Tierney).

We have been led to obtain some satisfaction in our clinical diagnosis of pituitary disorders from skiagrams of the skull, showing an enlarged or abnormally small sella-turcica, but this may be misleading as a normal sella does not rule out pituitary disease.

It is interesting to note the effect brought about by pluroglandular hypo and hyperactivity, where two or more glands are at the same time perverted. As an example we have thyroid and pituitary deficiencies existing at the same time, both causing obesity, but the fat deposited at different parts of the body. Obesity of the pituitary type gives increased mammary development, hypogastric, mons padding, and feminine makeup, while the adiposity of thyroid type is characterized by fat around the neck and face, cuffing of

wrists and ankles, supraclavicular padding and fat padding on dorsa of hands and fingers. In both of these deficiencies we may have mental retardation. See Fig. 4.



FIGURE IV.

Comparison of hypopituitary (left) with hypothyroid (right) of the same age (forty-one). Note the absence of cervical and dorsal padding and of extremity adiposity in the pituitary, and their presence in the thyroid. (Drs. Englebach and Tierney).

These cases with somnolence and other signs of thyroid and pituitary insufficiencies give marked response to thyroid and pituitary therapy.

In the preceding we have emphasized mostly the hyposecretion in this gland while the hyperactivity of the anterior lobe gives just as remarkable and interesting conditions. Remembering the characteristics of this lobe a hyperactivity occurring prior to adolescence exerting its influence on the osseous and genital system giving a picture of gigantism, the hyperactivity after adolescence can no longer affect the long bones but exerts its influence on the short and flat bones, showing the characteristic acromegalic makeup, kyphosis, prominence of superciliary ridges and spade-like hands and feet.

The pubertas praecox cases attributed to a varied pathology—namely pineal, gonadal and suprarenal glands, consensus of opinion tends to the belief that this syndrome is more likely attributable to hypergonadal secretion. Leiner in a recent review quotes Anthony White to the effect that this condition was recognized among the ancients. Craterus wrote, "The subject was an infant, a young man, a mature man, an old man, was married and begat children, and all in the space of seven years. These cases even as young as four and one-half years have a remarkable increase in genital development, with secondary sex characteristics, such as pubic and axillary hair, bass voice, etc. They are also often associated with mental retardation. See Fig. 5.

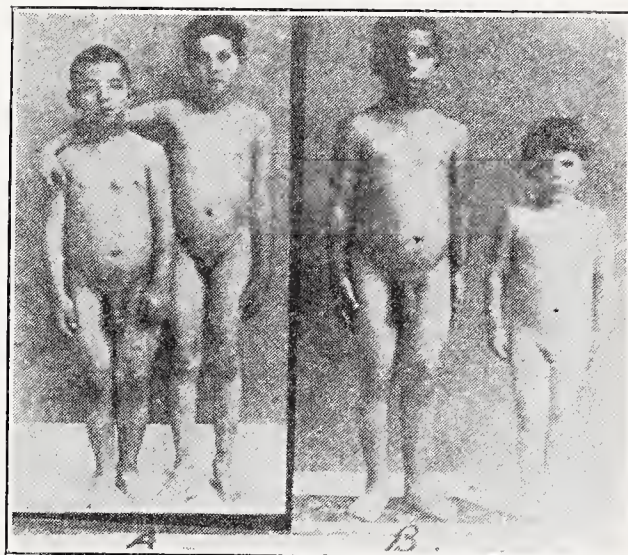


FIGURE V.

A. Fig. 5. Case 1. Aged four and a half contrasted with normal ten-year-old boy. B. Contrast of case 1 with normal boy four and a half years old. (Drs. Englebach and Tierney).

Myxedema and thyroid cases are so familiar to all of us they need only passing mention. The classical cases of myxedema exhibiting facial puffiness, narrow palpebral slits, puffiness under eyes, thick face, marked retardation of thought, thick speech, etc.

A PLEA FOR THE EARLY TREATMENT OF SQUINT.

M. B. SELIGSTEIN, M.D., MEMPHIS.

IN this paper I shall deal principally with concomitant convergent squint, because it is the type most frequently encountered and the one in which early treatment has the most value.

The family physician is usually the first one consulted by anxious parents and asked what is to be done with the little cross-eyed patient. The parents usually attribute it to measles, whooping-cough, fright, etc. In a majority of cases the ophthalmologist is consulted for the first time to remedy the condition for cosmetic effect, the patient and parents being totally ignorant of the low visual acuity of the squinting eye. All of you have heard of spontaneous cures, which are effected by either a change in association of accommodation and convergence, or a relaxation of internal recti, due to changed anatomical relations incident with growth. The belief in the spontaneous cure of squint is widespread among the laity and even in some cases the physician is guilty of telling the parent to wait. It is up to you as physicians to decide for these anxious parents whether these children should be told to wait, and by doing so forfeit the useful vision of the eye as well as to go through life cockeyed, with all its stammina or not. Do not let them wait, for, as Priestly Smith so ably puts it, "To wait and see too often means waiting and not seeing." By advising the proper course to pursue you will be the means of not only having a straight eye but a normal seeing eye as well.

How and why do a majority of these squints occur? A child begins to fix with both eyes at about six months of age. He begins to fix objects attentively between the second and third years. For example, let us presume that a child has a hyperopia, commonly called far-sightedness, of three or four diopters, which causes the eyes to converge three or four meter angles. This is explained by the relation of accommodation to convergence. When looking at an object twenty feet or be-

yond, the eyes are parallel or nearly so and there is no convergence, but in looking at an object one meter away from the eye, the eye must accommodate one diopter and must, therefore, converge one meter angle. In looking at an object one-fourth of a meter from the eye, the eye must accommodate four diopters and converges four meter angles. To explain in another way, the hyperopic or far-sighted child is placed in a dilemma. If he wishes to see distinctly, he has to make too strong an effort of accommodation, but he can do this only by putting forth an excessive convergence so that he sees double. If he converges only as much as necessary, he cannot bring the proper amount of accommodation into play and thus sees indistinctly. He is, therefore, given the choice of seeing distinctly and double or indistinctly and single. He prefers seeing distinctly and double, because one eye is less distinct and double vision is made less disagreeable to him on account of the ease with which he learns to ignore the less distinct image. The natural sequence is that one eye, usually the one with indistinct vision, turns in and becomes amblyopic or blind from disuse. The causes of convergent squint are:

1. Hypermetropia or far-sightedness.
2. Anisometropia or unequal refraction of the eyes.
3. Motor Anomalies.
4. Specific fevers, especially whooping-cough, measles and diphtheria.
5. Violent mental disturbances, caused by fright, convulsions, etc.
6. Birth injuries.
7. Occlusion of the eye for too great a length of time.
8. Hereditary influences in about fifty-two per cent of cases.
9. Opacities of the media in one eye or diseases of perceptive organs.

Varieties of concomitant convergent squint are:

1. *Occasional squint* in which one or both eyes deviate from their normal axis. It may manifest itself under various conditions, as in near work, in looking down, strong emotion, fear, anger, and fatigue. Occasional squints are sometimes periodic and may appear every second or third day. There are two kinds of occasional squint.

(A) *Premonitory occasional squints* are simply precursors of a constant squint and may become constant in two or three months if neglected.

(B) *True occasional squints* are much less common than premonitory and may cease to show themselves when fusion faculty develops and refractive error is corrected.

2. *Constant unilateral squint* which is the type in eighty-five per cent of cases, there is a deviation constantly present and the angle of the squint usually remains the same. It is also manifested by the same eye when both eyes are uncovered. This is the type that responds to early non-operative treatment, before seventh year, in a large per cent of cases.

3. *Alternating squint*, fifteen per cent. In this type the squinter fixes with either eye, indifferently. They arrange themselves in two classes.

(A) *Accidentally alternating* because the refraction is the same in both eyes and does not essentially differ from the unilateral type. If not treated it will later become a constant unilateral squint and is treated as such.

(B) *Essential alternating* in which the error of refraction is small and visual acuity of both eyes is very good. It is this class of patients that have congenital total inability to acquire fusion. These cases suffer less than the unilateral squinters, because each eye is used in turn and vision does not deteriorate. In this type of squint non-operative treatment is of little value at any age, because there is a failure of development of the fusion faculty in the brain.

Symptoms

1. Manifest deviation of the eyes.
2. Diplopia or double vision, the false image being suppressed in the squinting eye.
3. Peculiar attitude of head which may or may not be slightly tilted.

4. Amblyopia or blindness from disuse of squinting eye.

5. Reflex symptoms which may or may not be present, such as asthenopia, pain in the eyes, conjunctival irritation, headache, which may be orbital, supra-orbital, temporal or occipital in character. There may be pain in other parts of the body, spasms of the facial muscles, and very frequently digestive disturbances, such as nausea, vomiting, and interference with general nutrition. The reflex symptoms are more pronounced when the deviation is so slight that the patient can overcome it by an extra effort.

A number of the accommodative varieties of cases will respond to early non-operative treatment. By early treatment, I mean before the sixth or seventh year. Because after the sixth or seventh year the fusion faculty becomes completely developed, making it almost impossible to restore binocular vision, which is the principal goal to which all treatment is directed.

The treatment of convergent squint is as follows:

1. A thorough retinoscopy and refraction under atropine cycloplegic should be given with full or nearly full correction of the refractive error and the patient should be made to wear the glasses constantly. By retinoscopy or shadow testing even a one year old child may be given a very satisfactory refraction. This alone will effect a prompt cure where the deviation is still of the periodic accommodative type and where the squint is due to excessive convergence, caused by excessive accommodation.

2. Exercising of the fixation to prevent deterioration of vision of the squinting eye. This is accomplished by a bandage over the non-squinting eye for one-half hour, three or four times daily or atropine instilled in the non-squinting eye. These two agents cause the squinting eye to fix.

3. Exercising of the fusion faculty, which is best accomplished by the Worth Black amblyscope, an instrument of the stereoscope type, which is so arranged that it compels both eyes to act together and can be adjusted to any degree to suit the angle of the squint. The amblyscope not only exercises the fusion

faculty but also the muscles of convergence and divergence. Other orthoptic exercises, such as bar reading (reading with a bar or pencil between the eyes and the print) and exercises in moving the eyes in various directions by means of prisms. Also the general treatment should be looked after. Such con-

ditions as neurasthenia, hysteria, general debility, and associated conditions, particularly intra-nasal disease, as a source of reflex irritation, should not be neglected. After all these suggestions have been thoroughly tried and failed, then and then only should operation be resorted to.

THE IMPORTANCE OF EARLY CORRECTION OF CROSS EYE DEFORMITY.

BRUCE P'POOL, M.D., NASHVILLE.

STRABISMUS, squint or cross eye, as it is more commonly called is one of the most difficult and one of the most important conditions the oculist is called upon to treat. Being non-inflammatory there is an inclination to defer active measures until the time for getting the best results has passed.

There are two divisions of this condition:

1. Paralytic squint.
 - (a) Partial
 - (b) Complete
2. Concomitant squint.

In paralytic squint the eye is in faulty position or malposition and can not be voluntarily moved in the direction or in the field of action of the paralyzed muscle. The innervation of a muscle or several muscles is involved and we are likely to have a troublesome diplopia. This condition is usually the result of some general systemic affection in adults (syphilis). It is not within the scope of this paper to discuss the paralytic type.

2. Concomitant strabismus or cross eye.

The form we will discuss more fully at this time is that condition in which the visual axis deviates from the normal (generally the movements of the eye are normal or nearly so) accompanied by a defective fusion faculty, this latter making early treatment imperative if we hope to retain useful vision, becoming apparent as it does when the child is very young, the inclination is strong to advise waiting until old enough to handle more easily, but if we stop to consider that a blind

eye is or should be to the oculist much the same as losing a life is to the general practitioner, one could form some idea of the importance of prompt action in these cases.

All squinting eyes have at first the power of central fixation, *i. e.*, if the straight or fixing eye is covered the deviating eye will straighten and receive the impulse on the macula. After a time this power becomes weakened and finally lost. Rarely in an eye that has converged say from the age of one year will there be any vision worth mentioning at the age of seven years.

There are three types:

1. Unilateral convergence or monocular concomitant strabismus. In this, one eye fixes and the other constantly deviates. Conservatively estimated at seventy-five per cent.
2. Alternating strabismus. In this each eye fixes alternately. This makes up the major part of the remainder.
3. Divergent strabismus.

Of these the unilateral and the alternating squint will receive our attention. The majority of these cases develop before the fourth year and practically all, if treatment be prompt and persistent, will give most gratifying results. An infant with a noticeable squint requires a careful direct ophthalmoscopic examination of the fundus of each eye. They are neurologic cases when we discover, as we frequently do, edematous changes in the fundi that indicate an increase of intracranial pressure. The degree of intracranial pressure should be measured and recorded at once

by a spinal mercurial manometer at lumbar puncture to verify fundus findings and if it reveals a decided increase above normal the excess of pressure is usually due to an intracranial hemorrhage at birth. If there is a history gotten of a difficult or instrumental delivery the fundi should always be examined.

A word as to etiology. This, as we all know, is still the subject of conjecture and theorizing. The various theories are mentioned in turn.

1. Muscles: Attributing the cause to an overstrung muscle, faulty insertion, or a weak opposing tendon. This theory is questionable, inasmuch as the majority have perfect movement in all directions early in the case.

2. Hypermetropia: All children are born hypermetropic. This as a direct cause must be held in question.

3. Lack of fusion faculty is the most feasible, and when fused with the hypermetropic theory one has a working basis, and these two points are the ones from which we hope to derive beneficial results.

Other causes:

4. Shock.

5. Severe illness (typhoid fever).

6. Convulsions.

7. Heredity: This is a strong element. Statistics varying from forty to sixty per cent showing a family tendency.

The chief reasons for advocating very early correction of squint are three in number:

1. Loss of vision in the cross or squinting eye (Amblyopia exanopsia this deterioration of vision from disuse is called). It ensues very rapidly in young children. Worth, an eminent London ophthalmologist, who has devoted a great part of his life to the study of this problem, says, "A child with good vision in each eye who develops a constant squint (unilateral) at the age of six months will in the absence of proper treatment become rapidly blind in the cross or squinting eye," the loss of vision is so rapid that the power of central fixation is often lost in twelve weeks.

2. A permanent loss in the ability to use the two eyes together and this occurs in practically every squint of long standing.

Binocular single vision is effected by the psychical blending of the two sets of visual

impressions into one composite picture. According to the experience of Worth of London, the power of fusion of the images of the two eyes begins development at the age of two years and is considered complete at the age of seven years.

It is impossible for the mind's eye to fuse the images of the two eyes into one when a squint is present. Children readily overcome this double vision by ignoring the image of one eye. This necessitates the using of one eye at a time, therefore, unless the squint is corrected early the ability to use the two eyes is lost and never regained.

3. Cosmetic reason and this is the one which brings the patient to consult an oculist.

The unfortunate cross-eyed child is handicapped, he is shy, backward in school and avoids his playmates, and becomes of a sullen, disagreeable nature.

As regards treatment, this requires a vast amount of patience, time and tact for in treating a child one must have the co-operation and confidence of the mother; one must diplomatically prepare the mother to become an able assistant, the major part of developing the fusion faculty sense falling on her. If too young to do a retinoscopy one can by the systematic use of atropine tide over the intervening months until it is possible to do a retinoscopy. As early as possible the child must be fitted with glasses to be worn constantly during the waking hours. Almost any child with defective vision; *i. e.*, high hypermetropia should wear glasses well by eighteen months.

Atropine should be used in the straight or fixing eye as much as necessary to keep the vision blurred for near objects, thus causing the child to use the converging eye for getting a clearer view of objects close at hand. There is no hard and set rule for using atropine but generally speaking it should be dropped in the eye once daily for a period of seven days out of each month.

Careful retinoscopy should be made at the earliest possible time; glasses ordered full strength; if unilateral squint is present atropine in fixing eye; if alternating squint atropine in eye that fixes most readily.

Conservative methods having been tried on

all strabismus patients who are particular about their looks before operative age (nine years) is reached, and if these methods have failed to correct the deformity completely then surgical measures are advised.

Operation upon the external ocular muscles for the correction of squint is advisable when the patient is nine years old and when all necessary non-operative measures have been tried and failed to correct the deformity. The procedure depends upon the character and angle of deviation that exists and the nature and extent of lateral rotations.

If the external lateral rotation of the squinting eye is found to be normal in unilateral squint that measures fifteen degrees of deviation, a complete tenotomy of the internal rectus of the squinting eye usually corrects. If the deviation measures thirty degrees a complete tenotomy of the internal rectus and an advancement of the external rectus of the squinting eye usually corrects.

If the deviation of the squinting eye measures forty-five degrees a complete tenotomy of

the internal recti of both eyes usually corrects.

Case 1. H. T., age twenty, developed unilateral squint of fifteen degrees in left eye at age of two years. Patient had never worn glasses.

Vision right eye 20-20.

Vision left eye fingers at three feet only.

A complete tenotomy of internal rectus of left eye corrected this squint. This case illustrates the fact that when one develops a squint at the age of a few months to one or two years and if glasses are not prescribed the patient will become blind in the cross or squinting eye.

Case 2. Mrs. T., age twenty-six, developed unilateral squint at the age of fifteen years. This squint measures forty-five degrees. Patient had never worn glasses.

Vision right eye, 20-20.

Vision left eye, 20-30.

In this case the squint developed later in life and there was not much deterioration of vision in her cross or squinting eye.

CASE REPORT.

W. L. WILLIAMSON, M.D., ASSOCIATE PROFESSOR GYNECOLOGY, MEDICAL
DEPARTMENT, UNIVERSITY OF TENNESSEE. MEMPHIS.

A NEGRO housewife, 40 years of age, was admitted to the Memphis General Hospital August 5, 1922, complaining of a marked distention of the abdomen, shortness of breath and progressive weakness.

She was in good health until five years ago. She weighed at that time 150 pounds. Her abdomen was flat and her waist measure was about 30 inches. She first noticed distention of the abdomen which she called "bloating" and "this would come and go but little more remaining each time." She did not notice any greater distention on one side than on the other side. There was no other discomfort than that caused by the enlargement and weight in the lower abdomen.

The abdomen continued to enlarge until one year ago, when her physician "tapped" her, withdrawing one gallon of fluid. Since that time the enlargement has been much more rapid.

There has been no pain, but during the past few months she has been unable to continue her work on account of shortness of breath and weakness. However, she is able to walk about the house, and when quiet, is comfortable. She cannot sleep on her back, but rests well on either side. Her previous health has always been good. She has had normal menstruations until one year ago. She has given birth to four normal children, the youngest nine years ago. She denies any venereal infection.

Physical Examinations She is a well developed but poorly nourished negro with such a marked fluid distention of the abdomen that she walks in a hyper-erect position in order to maintain her balance.

The eyes and mouth are negative.

The heart apex beat is visible and palpable in the fourth interspace. It is regular and the sounds are of good quality. There is no murmur.

The chest wall is thin and the respiratory excursion is limited below. The breathing is shallow and it seems to be limited to the upper lobes of the lungs. The breath sounds are good and no rales are heard.

The abdomen is very large and pendulous. It is markedly distended, large veins being visible over the thin walls. There is dullness over the entire abdomen and in the flanks. The succussion wave is easily transmitted through the tumor. The skin is tense and

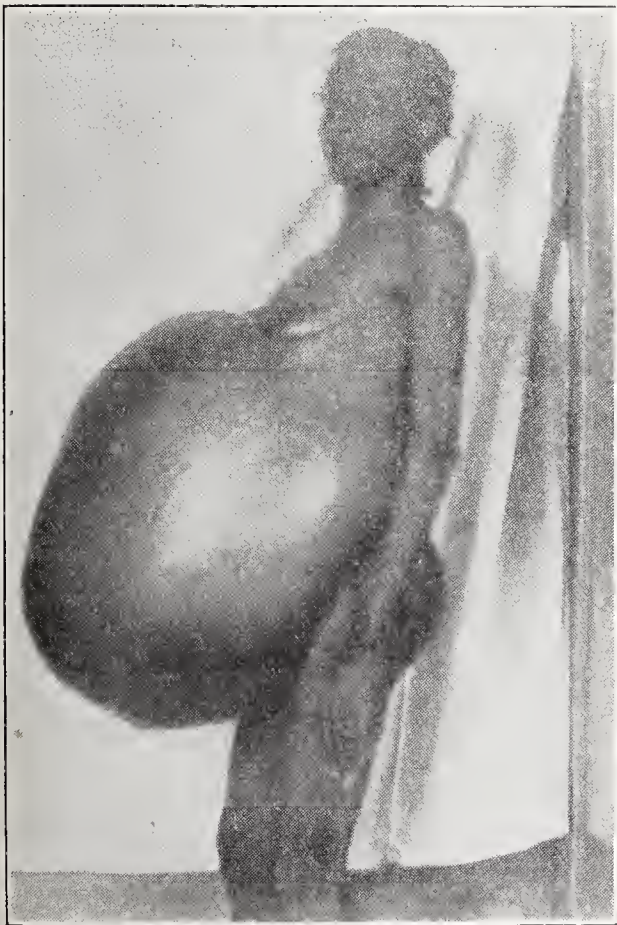


Figure 1.

glistening. The waist measure is sixty-five inches. The patient weighs 222½ pounds. Figures 1 and 2.

The vulva is gaping and the labia are widely separated. The perineum is lacerated and relaxed. There is a cystocele and a rectocele bulging between the labia. The cervix is small and soft. The uterus and its appendages are not palpable.

The urine is negative, except for granular casts. The blood count is about normal. The Wasserman is 4 +.

Six days after admission she was prepared for operation.

Preoperative Diagnosis Pseudomucinous cystadenoma of ovary.

Operations Under novocain anesthesia, an incision below the umbilicus six inches in length was made down to the cyst wall. The tension in the abdominal wall widely separated the edges of the incision exposing an area of the cyst. The skin around the incision was carefully protected and covered by towels, held in place by clamps into the skin at the margin of the incision. A small trochar was used to puncture the cyst and allow the gradual escape of the fluid. Through this incision several lobes of the cyst were emptied, withdrawing nine and one-half gallons of a coffee-colored fluid. This consumed about thirty-five minutes. It greatly relieved the distention in the lower abdomen, and made respiration easier.

The distention in the upper abdomen, however, was not much relieved through this lower incision and the lobes higher up could not be reached.

To overcome this, another incision was made in the median line about six inches above the umbilicus with the aid of novocain infiltration. The trochar was used in this incision but the contents were too thick and ropy to flow through the trochar.

The two incisions were united, making an incision about twenty inches in length. Along the entire length of this incision the cyst was found rather firmly adherent to the abdominal wall and caused the patient great pain

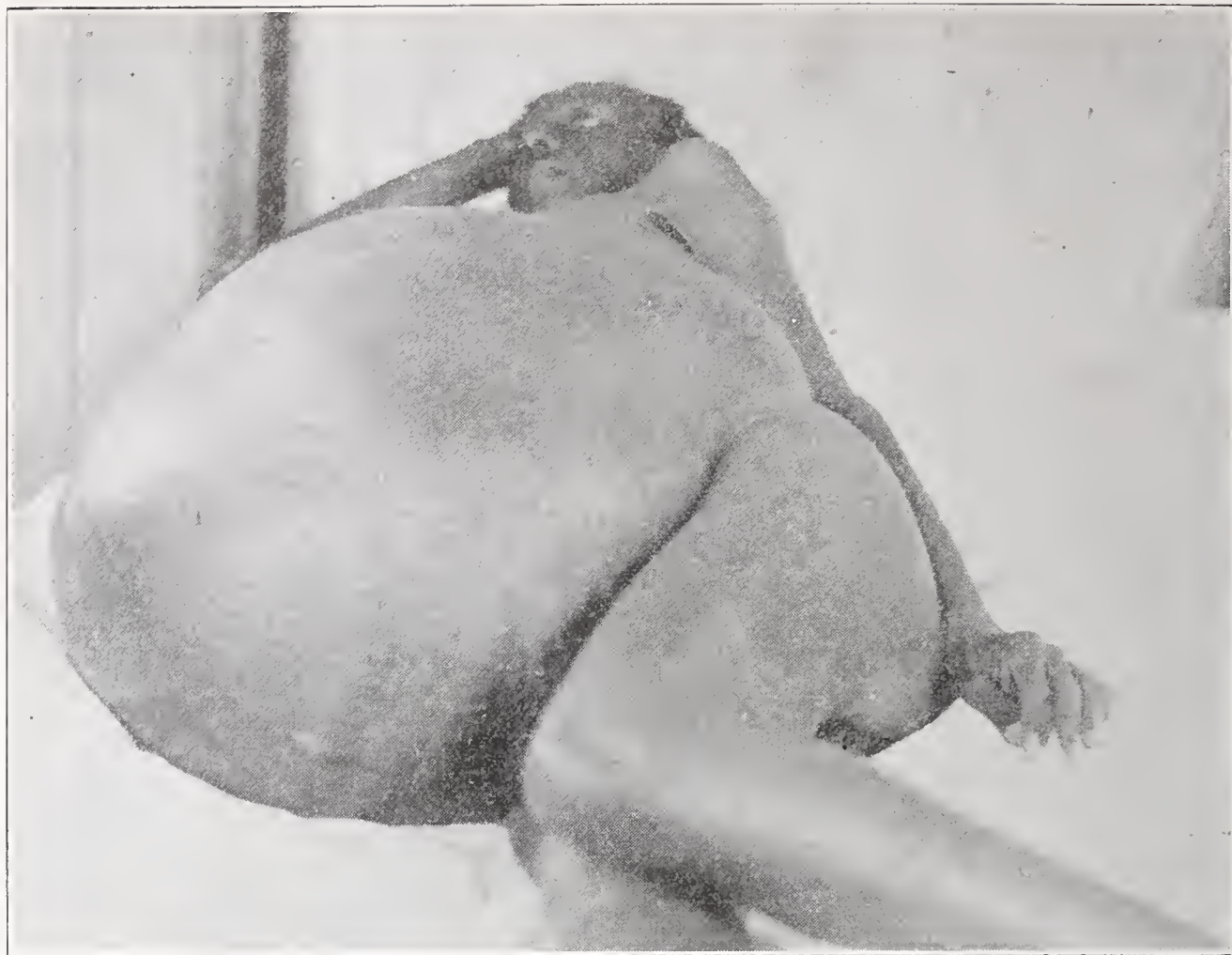


Figure 2

in separating the adhesions. At this point, ether was started and given for ten minutes, until the cyst was shelled out of the abdominal cavity. These adhesions were rather firm and required considerable force to free them. The cyst was most densely adherent along the left wall of the lower abdomen and especially to the bladder. There were omental adhesions but none to the intestines. The only free part of the cyst wall was an area about six inches in diameter at the upper extremity of the cyst and a free pedicle two inches in length from the right ovary.

Two liters of normal saline solution was left in the abdomen. Three hundred C. C. were given intravenously during the operation.

The peritoneum and fascia were closed with Chromic catgut No. 1, doubled; the skin, with interrupted silkworm gut. The relaxed abdominal wall was pulled in over the median line and covered with an abundance of dressings. A sheet was put around the abdomen and lower thorax and pinned tightly so as

to make firm pressure.

The patient was put to bed in considerable shock. She was surrounded with artificial heat. One hour later a slow hyperdermoclysis was started and continued until she was given 1,000 C. C. of saline solution.

The tumor removed was composed of numerous cysts, varying greatly in size. This mass weighed forty-three pounds, and the fluid removed by trochar weighed seventy-eight pounds, making a total weight of material removed, one hundred and twenty-one pounds.

There was a considerable amount of the fluid lost during the operation. Thirteen days after the operation, when the patient was able to stand on the scales, her weight was eighty-nine and eight-tenths pounds, showing a loss of weight of one hundred and thirty-two pounds. Figures 3 and 4.

The report of Dr. J. A. McIntosh of the Pathological Department of the University of

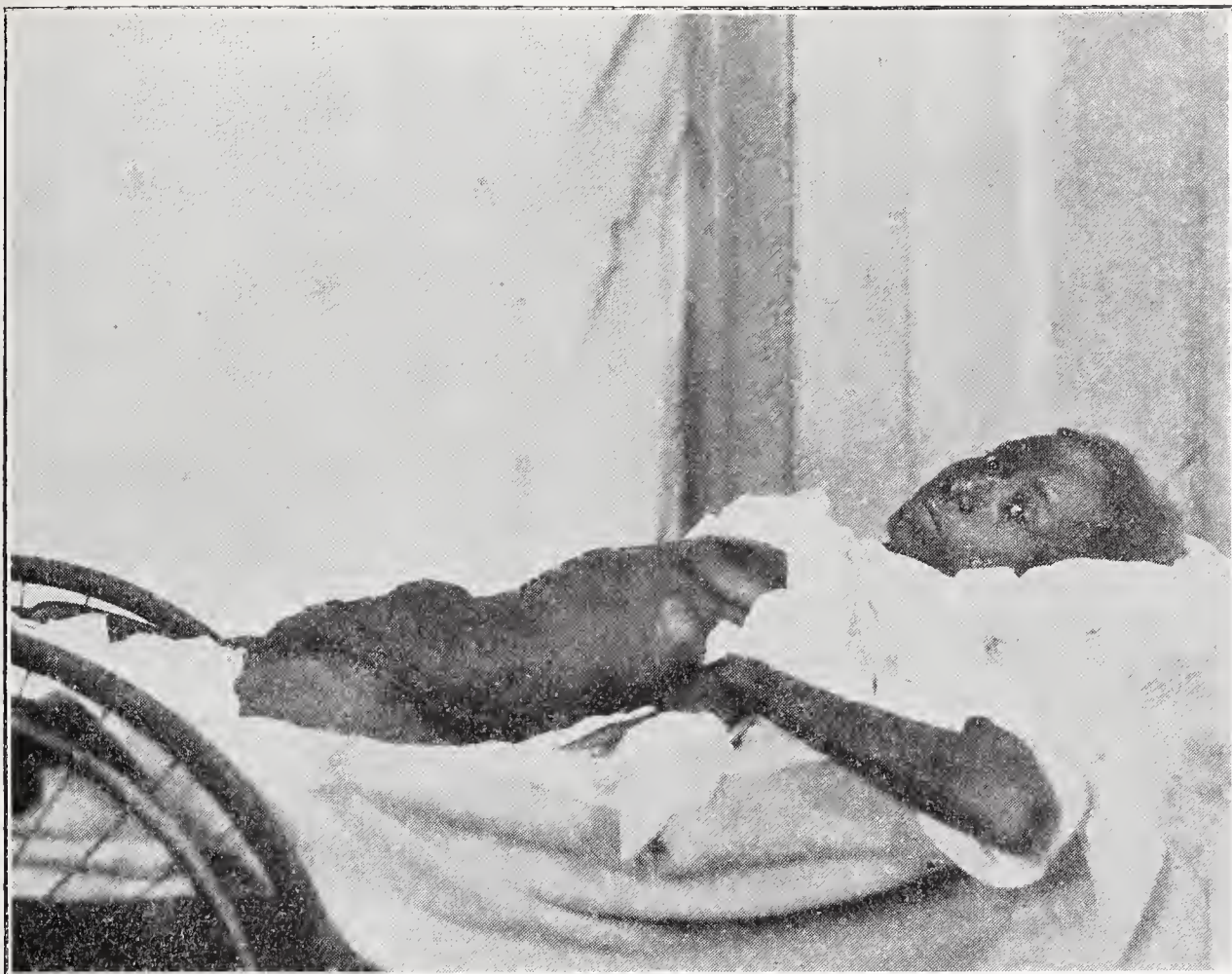


Figure 3

Tennessee, on this tumor is as follows:

Macroscopic: Specimen consists of two pieces. The weight together is 13,145 grams. It is of a shiny, pearly-gray color. The specimen is coarsely nodular in outline. Cut section reveals many cavities containing clear mucoid material and a thin, brownish, milky stringy fluid which is odorless. The linings of the cavities are smooth and glistening. A small Fallopian tube is attached to one specimen. Fimbria is patent and the supporting stroma cystic and firm.

Fluid: Specific Gravity, 1022.

Reaction, neutral.

Slight trace of sugar.

Albumin, 4+.

Microscopic: Wall of large specimen consists of ovarian tissue with many small pockets of mucoid material, some lined by epithelium and others unlined. The tube is negative.

Diagnosis: Pseudomucinous multilocular cystadenoma of the ovary.



Figure 4

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

JANUARY, 1923

COMMITTEE ON MEMORIALS

At the last annual session of our State Association, the House of Delegates appointed the Committee on Memorials. It is composed of all the secretaries of the component county societies, with the secretary of the State association as chairman. It was outlined that upon the death of any member, the secretary of his county society, should, at as early a time as practicable notify the chairman of the occurrence, communicating such incidents relating thereto as might be of interest to fellow members, including action taken or resolutions passed by the county society.

A number of the secretaries of the county societies are evidently unaware of this action of the House of Delegates, and for us properly to honor and record the passing of our professional brothers, conformity to the injunctions of the House of Delegates in regard to reporting deaths is essential.

The address of the chairman, to whom these returns are to be made is 154 Eighth Avenue, North, Nashville, Tenn.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

The Committee on Public Policy and Legislation of the State Medical Association has formulated a program which may be stated briefly as follows:

1. The correction of defects in the Medical Practice act.
2. The modification of the Workmen's Compensation law.
3. The modification of the State Narcotic law.
4. The amendment of the Vital Statistics law.

Definite policies have been formulated with respect to these laws. Negative policies, of

course, cannot be formulated until the Legislature is in session.

It would be inappropriate to go into exhaustive details at this time. It suffices to say that all these laws affect doctors and the public. All these laws are of vital concern and the amendments to be sought are intended to remedy defects which experience has demonstrated to be present.

The profession has declared its attitude on some of these measures in no uncertain terms and it will be the pleasure of the state committee to carry out these policies in so far as possible.

ANNUAL SESSION 1923.

With the advent of the New Year the Tennessee State Medical Association pleasantly contemplates the approach of its next annual session at Nashville April 10-11-12.

Inquiries already received by the Committee on Program indicate an interest and desire on the part of members actively to participate in the proceedings.

Any information, in this connection, desired by members will be gladly furnished by the chairman of the committee, who may be addressed at 154 Eighth Avenue, North, Nashville, Tennessee.

NEW CHARTERS FOR ALL COMPONENT COUNTY MEDICAL SOCIETIES.

Pursuant to the action of the House of Delegates taken at the last annual session of the Tennessee State Medical Association, new charters for every one of the component county medical societies have been prepared and will be forwarded to the secretaries of the respective organizations, by parcels-post, insured, during the course of this month.

This action was taken by the House of Delegates owing to the fact that in a number of instances the charters of county medical societies had been misplaced or destroyed by fire or otherwise, and it was deemed expedient to issue an entirely new series.

An inexpensive frame with glass cover for the document would minimize the incidence of future loss and furnish an object of mural decoration for the place of meetings.

A MODERN MARTYR

Under the above heading the following editorial recently appeared in the *Nashville Banner*:

"Vaillant, the French scientist, who is in charge of the x-ray laboratory of a great Paris hospital, is worthy to be enrolled among the number of those who have deliberately become martyrs to the cause of human advancement. Prof Vaillant is still alive, but he has the right to join the glorious company of the unselfish who have given themselves that others might live more abundantly.

A day or two ago Vaillant underwent the thirteenth operation which has been performed in the effort to save him from the attacks of a disease brought on by his tireless efforts to make the x-ray something which would mean much to the alleviation of human ailments. He has been fully aware of the danger which threatened and it took a rare brand of courage and devotion to persist. His left arm is entirely gone and his right forearm has just been amputated.

The incident may serve to remind us of the many others who have taken the path which Vaillant is treading and who gave their lives as he is doing in the interest of modern science. There was Pierre Curie, the co-discoverer of radium, who fell a victim to his own discovery. There was the young American doctor who calmly gave himself as a subject for experiment in order to demonstrate his theory that mosquitoes caused the fearful spread of yellow fever. There were many others.

The modern martyr endures a martyrdom which is self-imposed and the scene is not an amphitheater or a crowded street, but the spirit is the same whether it is exhibited in a laboratory or elsewhere. The encouraging and inspiring part of it all is that the world still has men and women who are willing to make such a sacrifice for their fellows."

A custom not entirely obsolete at some of our larger meetings where "orations" on medical topics are delivered, is, properly, to refer in glowing terms to the wonderful progress accomplished by medical science and to call attention to the toll which at times these achievements have exacted from our profession. These statements from our fellows fall agreeably upon our ears, but when an article, like the one quoted, comes to us from a secular source it is doubly appreciated and it is helpful and encouraging to us to know that in this time, the greater part of the intelligent portion of society takes cognizance

of and pays tribute to the men who make such sacrifices in the cause of suffering humanity.

DEATHS

DR. D. R. STOUT

The Sullivan, Carter and Johnson County Medical Society.

Bristol, Tenn., December 14, 1922.

The undersigned committee, appointed at the regular December meeting of the Sullivan, Carter and Johnson County Medical Society to draft suitable resolutions regarding the death of our fellow member, Dr. D. R. Stout, reports as follows:

Resolved, that in the passing of Dr. Stout this society loses one of its most active and faithful members, and each individual member a highly esteemed friend. He was one of our charter members and while attendance at its meetings always involved eighty miles travel and a day lost from active work he was seldom absent, until forced to retire from active practice by reason of failing health.

While of a modest and retiring nature he loved to mingle with his fellow practitioners and impart and receive new ideas relative to his humanitarian work. He was of a genial disposition and always added much to the social pleasures of our meetings and since he was stricken with disease, his absence has been frequently mentioned and regretted.

He was a graduate of the Tennessee College of Medicine, class of 1891, and spent an active and useful life alleviating the suffering of the sick among the people who knew and loved him best.

He was a member of the Association of Surgeons of the Southern Railway; of the Tennessee State Medical Association and of the Sullivan, Carter and Johnson County Medical Society, having been honored with the presidency of the latter society for the year 1917.

Resolved, that this society extends its sincere sympathy to the bereaved family and that a copy of these resolutions be spread on our minutes, also furnished the family, the secretary of the association of Surgeons, of

the Southern Railway, and the secretary of the Tennessee State Medical Association.

Signed:

W. K. VANCE, M.D.

T. F. STALEY, M.D.

W. W. VAUGHT, M.D.

DR. FRANK FOX

A member of the Tennessee State Medical Association, died at his home, Greenville, on November 25, in the twenty-sixth year of his age.

DR. FRANK A. JONES

IN MEMORIAM

With emotions of profoundest sorrow the Memorials Committee of this society directs the attention of its members to their recent loss by death of one of its most valued and most highly-esteemed members. On Thursday, November 23, 1922, the Grim Reaper knocked at the door of Dr. Frank A. Jones. As unexpected as a lightning bolt from a clear sky the summons came; but it found a watcher with his lamp trimmed and burning, who, without a murmur, answered "here am I" and passed within that portal whence he shall return no more forever.

Dr. Jones was born in Brownsville, Miss., July 16, 1869. His early education was obtained in the public schools, followed by the literary course in Southern University, at Greensboro, Ala., from which institution he was graduated. Thereafter he studied medicine in and was graduated from the Louisville Medical College. He engaged in general practice first in his home county, later at Indianola, Miss., and then in Memphis, in which city he located permanently thirty-one years ago.

During his professional career Dr. Jones achieved a liberal clientele which appreciated those attributes in his character which make for service of the highest order. A close and industrious student in the line of work which mainly engaged his interest, his skill and ability were generally recognized and acknowledged by his professional brethren, as well as by those who sought his professional advice. Early in his career in Memphis he became identified with the teaching corps of the Memphis Hospital Medical College as

Clinical Instructor in the Disease of the Chest. Retaining the bias thus given to his energies he became later Professor of Physical Diagnosis in that institution, and upon its amalgamation with the University of Tennessee, Professor of Medicine therein. Numerous professional distinctions were conferred upon him as the years passed by his professional brethren who appreciated his attainments, amongst which may be mentioned, president of the Southern Medical Association, of the West Tennessee Medical Society, and of the Memphis and Shelby County Medical Society; chairman of the Section on Medicine of the American Medical Association; as well as numerous other lesser distinctions for which his activities so well fitted him. Dr. Jones was also a member of this committee of our society. His contributions to the discussions of timely medical topics both with pen and orally were numerous and always interesting and illuminating. A fluent speaker he was ever ready to engage in discussion; but though he expressed himself with a vigor and emphasis which was characteristic, his sense of humor was ever so evident and so easily invoked as to leave no sting lurking beneath his utterances as a forensic antagonist. It may be truthfully said that amongst his closest friends and warmest admirers were some who often differed with him most strenuously.

Aside from his professional attainments Dr. Jones was a student in many other directions. Particularly should mention be made of his attainments as a student of the sacred scriptures. The readiness and aptness with which he exhibited his familiarity with them was equaled only by the strictness with which he applied them to his daily life. His familiarity with the classic secular writers could have been acquired only by years of devotion to the pleasant walks of literature far removed from the active interests of a busy professional life.

As a citizen Dr. Jones engaged himself with every activity looking toward the advancement of public, material, moral, and spiritual uplift. With regard to these his activities have been too pronounced, too numerous and too recent to need recapitulation at this time.

So, therefore, this body, the Memphis and Shelby County Medical Society, hereby records its profound regret at the removal from its midst of one so able, so congenial, and withal so highly esteemed as was Dr. Jones. With reverential and with solemn acquiescence it bows to that mysterious decree which nevertheless doeth all things well. And it hereby records its abiding resolution each and everyone, to emulate those sterling attributes of character which in the life of our departed brother wrought so much that was good, that was true, that was courageous and that was helpful to others.

JOHN L. JELKS, *Chairman.*

P. W. TOOMBS,

B. F. TURNER, *Acting.*

COUNTY MEDICAL SOCIETIES

Communications from the following County Medical Societies give notice of the election of their officers for 1923, under the accompanying dates:

December 5, Polk County—Dr. A. J. Guinn, President; Dr. H. P. Hyde, Vice-President; Dr. F. O. Geisler, Secretary-Treasurer; Dr. A. W. Lewis, Censor; Dr. A. W. Lewis, Delegate State Association; Dr. T. J. Hicks and F. O. Geiser, Alternates; Dr. F. M. Kimsey, Chairman, Dr. A. E. Lewis; Dr. C. W. Strauss on Committee of Public Policy and Legislation.

December 6, Wilson County—Dr. J. H. Puryear, President; Dr. Dallis L. Cornwell, Vice-President; Dr. Walter S. Dotson, Secretary-Treasurer.

December 11, Anderson County—Dr. J. H. Gammon, President; Dr. J. T. Hayes, Vice-President; Dr. J. S. Hall, Secretary-Treasurer; Dr. J. T. Hayes, Delegate to State Meeting; Dr. S. B. Hall, Alternate.

December 13, Dyer County—Dr. B. C. Marr, President; Dr. John Cook, Vice-President; Dr. R. L. Motley, Secretary-Treasurer.

December 20, Knox County—Dr. R. E. Lee Smith, President; Dr. M. H. Lee, Vice-President; Dr. Jesse C. Hill, Secretary-Treasurer.

December 20, Shelby County—Dr. J. B. McElroy, Acting Dean, University of Tennessee College of Medicine, President; Dr.

W. T. Swink, Vice-President; Dr. T. N. Copledge, Treasurer; Dr. A. F. Cooper, Secretary.

December 22—Roane County—Dr. G. E. Wilson, President; Dr. J. A. Sewell, Vice-President; Dr. W. W. Hill, Secretary-Treasurer; Dr. T. H. Phillips, State Delegate; Dr. J. J. Waller, Censor for three years.

January 2, Marion County—Dr. W. L. Nichols, President; Dr. J. W. Kirkpatrick, Vice-President; Dr. W. R. Irish, Secretary-Treasurer; Dr. J. L. Raulston, Legislative Committeeman for the Society.

At the meeting of Tipton County Medical Society December 21, 1922, the following were elected officers for the year 1923:

President, Dr. G. B. Gillespie; Vice-President, Dr. L. A. Yarbrough; Vice-President, Dr. A. J. Roby; Secretary-Treasurer (re-elected), Dr. J. F. Myers.

ANNUAL DUES

The open season for annual dues for 1923 has begun. It started December 5, when Dr. Francis O. Geisler, the secretary of the Polk County Medical Society sent in the dues of the first eleven members to pay him their 1923 annual dues. This was immediately succeeded on the following day by a remittance from Dr. Walter S. Dotson, secretary of the Wilson County Medical Society, covering the dues of thirteen members of that organization.

Since this commendable beginning, others are following promptly and the smile on the face of our treasurer broadens daily.

MEDICAL NEWS AND NOTES

SURGEONS OF TENNESSEE TAKEN INTO FELLOWSHIP

At the Boston meeting of the American College of Surgeons, the Fellowship was conferred upon the following Tennessee surgeons:

Casa Collier, Memphis; Thomas N. Copledge, Memphis; Jesse J. Cullings, Memphis; Leonard W. Edwards, Nashville; McPheeters Glasgow, Nashville; Robert W. Grizzard, Nashville; Henry H. Hampton, Chattanooga; Samuel T. Hubbard, Chattanooga; John Overton, Nashville; William T. Pride, Memphis, John J. Shea, Memphis; Percy H. Wood, Memphis.

"X-RAY SECTIONAL MEETING"

The Central Section of the American X-ray Society will hold its mid-winter meeting in Louisville on Saturday, February 24, 1923, for one day including an evening session. All members of the Tennessee State Medical Association are invited and those interested in x-ray work are urged to attend.

E. C. ERNST, St. Louis, Mo., President.
J. T. MURPHY, Toledo, Ohio, First Vice-Pres.
B. R. KIRKLIN, Muncie, Ind., Second Vice-Pres.
D. Y. KEITH, Louisville, Ky., Secretary.

The following communications are self-explanatory:

MAYO CLINIC

Rochester, Minn., Dec. 7, 1922.

Journal of the Tennessee Medical Association,
Nashville, Tennessee.

To the Editor:

The enclosed letter has been published in the Journal of the American Medical Association and has resulted in bringing me many replies. I am anxious to reach as many members of the profession as possible on this subject and would appreciate it very much if you would publish my letter in your correspondence column.

Yours very truly,
A. H. SANFORD, M.D.
December 7, 1922.

To the Editor:

I am endeavoring to make a complete study of the distribution of human actinomycosis in this country. The number of cases reported in the literature is surprisingly small, and I know that the disease is not so rare as is sometimes thought. I shall greatly appreciate hearing directly from any one who has had experience with this disease, and desire to know concerning case histories the following: Age, sex, occupation, residence, state in which the disease was contracted, location of lesion, duration of symptoms, and any special points of interest connected with the treatment, outcome of the disease, or necropsy findings.

A. H. SANFORD, M.D.,
Mayo Clinic,
Rochester, Minn.

MISCELLANEOUS

HYGEIA: A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

For years the medical profession has felt the need for a periodical through which the public might be enlightened in matters of medical science. At the session of the House of Delegates in St. Louis, the sentiment crystallized and the Board of Trustees was author-

ized to proceed with this publication. As shown by the minutes of the last session of the board (page 1936), plans have now matured sufficiently to permit definite announcement. The April, 1923, issue—ready in March—of *Hygeia: A Journal of Individual and Community Health*, the first number of a scientific medical magazine for the public, will mark what, it is hoped, will prove to be another great step in the service which the American Medical Association is rendering to the medical profession and to the people of our country.

Aside from the utilitarian aspects of the title *Hygeia*—its brevity, ease of pronunciation, simplicity and attractiveness—it is symbolic of the very foundation of medical science and preventive medicine. The name signifies the purpose of the periodical; to interpret medical science to the public; to inform the layman concerning the fundamental facts of physiology and pathology; to keep him in touch with the advance that scientific medicine is making in the prevention and alleviation of disease. By its physical form, its attractiveness, its interest and its practical value, *Hygeia* should appeal to the lay reader as a publication worthy of his attention.

It is hardly necessary to tell physicians that there are many special problems confronting the editorial staff of the new publication. Every physician has been faced with the difficulty of placing a medical subject suitably before a lay audience. The speaker or writer has to put himself in the place of those whom he would enlighten; he must speak in the language of the masses; he must interpret technical terms in words of everyday usage. For the understanding of facts in relation to disease, for comprehension of immunologic reactions, for explanations of the way in which bacteria gain entrance into the body and produce infection, for knowledge of how various drugs produce effects within the body, certain fundamental knowledge is necessary. Unfortunately, the vast majority of our public do not have it; they have no knowledge of the essentials of either the anatomy or the physiology of their own bodies. The problem, as has been said, is a difficult one; but it is hoped that, by leading from the

elementary to the advanced, and by the use of chart, diagram, table and picture, *Hygeia* may be of service to every reader.

Everywhere, the Board of Trustees, the Council on Health and Public Instruction and the editorial staff have met a most enthusiastic response and are receiving offers of wholehearted co-operation. Among the contributors whose articles will appear in early issues are scientists of note who can write in the language of the intelligent layman; moreover, many lay writers whose names are household words among the American reading public have agreed to give their assistance. It now remains for the medical profession to do its share in placing this journal in the hands of the public. On their co-operation will depend largely the success of the enterprise.—J. A. M. A., Dec. 2, 1922.

HEALTH HINTS

KEEPING WELL IN COLD WEATHER

DR. HERMANN M. BIGGS, NEW YORK STATE
COMMISSIONER OF HEALTH.

Every year, just as regularly as the change of season causes people to close their windows, diseases of the air passages, such as common colds, bronchitis, tonsillitis and pneumonia, begin to show a marked increase. The reason for this is plain. With the windows open we get a circulation of fresh air containing a sufficient amount of moisture, or humidity as it is called. But with the windows closed, unless care is taken to secure proper ventilation, the air of the house soon becomes vitiated and unfit to breathe. Moreover, with our modern methods of heating the air soon becomes a great deal drier than the air of the Sahara desert. This dry air takes the moisture from the nose, throat and bronchial tubes, irritating these surfaces so that they are not in condition to repel any disease organism that may be inhaled or taken into the mouth. Then in addition to living under these conditions which make us more susceptible to throat and nose disorders, in cold weather we are much more apt to go into close, unventilated, crowded halls, theatres and street cars and thus get infected from other people especially when they cough and sneeze at us.

To avoid these cold weather diseases, we should try to approach summer conditions as near as possible. First of all, we should ventilate our homes regularly and systematically. One window opened a few inches at the bottom to let fresh air in and another opened a few inches at the top to let the foul air out will do wonders in keeping the air fresh. If your rooms are not so arranged that this can be done without creating a draft, try opening several windows or a door for a few minutes twice a day. Also be sure to sleep with your chamber window open wide at night, and thoroughly air your room in the morning.

Probably the greatest fault with modern houses is the lack of any provision for furnishing humidity or moisture to the air during the time we are using artificial heat. With the old fashioned coal range or air tight stove it was possible to keep a kettle of water steaming most of the time. Today with steam and hot water heating the problem is a difficult one and even with the hot air furnace, the water pot is usually inadequate in size. But moisture in the air we must have if we want to avoid dry irritated throats. Remember, also, that moist air at 68 feels warmer than dry air at 72, so by finding a way to humidify the air of your home you will not only be advancing your health but lowering your coal bill. Various devices that attach to radiators are on the market but any receptacle placed on the radiator and kept filled with water will serve the purpose.

Don't forget to take brisk daily outdoor exercise to keep well in cold weather. Only a few of the lower animals such as the bear can successfully hibernate.

Cold water thrown on chest and throat night and morning, followed by brisk rubbing and exercise has helped many people to withstand sudden changes of temperature. Better still accustom yourself to a cold plunge followed by a brisk rub-down and exercises.

Besides keeping ourselves in good physical shape and our living conditions right we must also take pains to avoid becoming infected from those having coughs, colds or other diseases of the air passages. The common cold is an infectious disease and often is the forerunner of other diseases such as pneumonia.

Avoid them by avoiding the discharges from the noses and throats of other people. A sneeze or cough, unguarded by the handkerchief will infect the air for many feet from the offender. Many colds, too, are caught by the common but dirty habit of wetting the fingers with the tongue.

To sum up, keep well in cold weather by breathing fresh, moist air, both when asleep and awake, by getting plenty of exercise and by avoiding in so far as possible inhaling or taking into the mouth and nose discharges of others.

THE EASIEST WAY

DR. CHARLES V. CHAPIN, HEALTH OFFICER OF
PROVIDENCE, R. I.

I have a book, written about 1900 years ago, by a very learned man. That is, he knew a great deal about many things, but he did not know much about medicine. Nevertheless, he gave a great deal of advice about the cure of disease, just as many people today, who know nothing about it, advise sure cures for all sorts of troubles. The old Roman, just spoken of, merely repeated old wives' tales. Listen to what he recommended for cough. "A wolf's liver, administered in milled wine, is a cure for cough; a bear's gall also, mixed with honey; the ashes of the tips of a cow's horn; or else the saliva of a horse." He also advised that the patient catch a tree toad and spit in its mouth and let it go, when the cough would go with it.

We readily laugh at such absurd notions and foolish superstitions, but there are plenty of people today, who are just as foolish as they would be if they took old Pliny's remedies.

There are vast numbers of persons, who, when they have a cough, buy a bottle of Mother James' Remedy, or some Knock-a-too Medicine, or the Jones Brothers' Tablets. Some "patent medicines" so-called, are actually harmful and most are as useless in any disease as Pliny's remedies. Over and above this, how ridiculous it is to suppose that a manufacturing concern in Louisville, or Haverhill, can have the least idea what particular treatment is needed for each par-

ticular person of the hundreds of thousands to whom the remedy is sold.

Cough is due to a number of causes and each kind needs its appropriate treatment. Probably more coughs are due to colds than anything else. Take care of a cold and it will probably get well; neglect it and expose yourself and no medicine will help. Proprietary remedies are a delusion and a snare. The most common cause of chronic cough is probably tuberculosis. The patent medicine maker cannot know whether the patient has tuberculosis. All he cares about is to sell a bottle and get a dollar. Perhaps he sells many bottles for many dollars. At last the discouraged patient goes to a physician and finds, too late, that he has well-developed consumption. Most people do not realize how often cough is due to disease of the heart, or arteries. He who hopes to cure heart trouble with patent medicine is indeed leaning on a broken reed. He might as well take a wolf's liver in milled wine. Wonders can be done for heart trouble by right living and sometimes the right medicine acts almost like magic. Certainly the patent medicine man cannot know what kind of heart disease the patient has but he can take the dollars and let the trouble go on.

Why are people so foolish? In part, at least, because it is the *easiest way*. No one wants to stay in the house to cure a cold. It is easier to take a dose of medicine. Every one rightly dreads consumption, and does not wish to give up work for a sanatorium, so he takes the medicine a friend prescribes, instead of consulting a physician. It is the *easiest way*, but like many an easy road, it often has a sad ending.

THE SLAUGHTER OF THE INNOCENTS!

Two more children have been offered up as sacrifices to the theological views of undoubtedly sincere but certainly misguided parents. It is none of the public's business! One of the parents says it isn't! In Cincinnati a 15-year-old high school girl was taken sick on October 24. Her mother had faith in divine healing and therefore did not call a physician. Nine days later events had shaken her faith enough to make her willing that a physician be called, but not enough to make her willing that the

physician should administer antitoxin. The girl died the next day. In Spokane, Wash., under "Christian science treatment," John Earl Halverson, 6 years and 11 months old, died, November 19, from diphtheria after a week's illness. The father stated to the press his views as follows: "We are Christian scientists and do not believe in doctors or antitoxins, so no doctor was called. I see no reason for making any fuss over this case any more than over any other death. The public is not interested in what the child died of, and I wish you would not make mention of the case."—*J. A. M. A.*, Dec. 9, 1922.

CLUTTERING UP PHARMACEUTICAL NOMENCLATURE.

On another page of this issue¹ will be found a report of the Council on Pharmacy and Chemistry explaining why "Esterol" has not been admitted to New and Nonofficial Remedies. Esterol is Frederick Sterns & Co.'s proprietary name for benzyl succinate. The product per se is unobjectionable. The fundamental objection to Esterol and the chief reason for its nonadmission to New and Nonofficial Remedies is its name. A multiplicity of names for any one medicinal substance is against the interests not only of scientific prescribing, but also of public welfare. Many of our readers will remember that when acetanilid was first introduced under a thousand and one names, cases were reported in medical literature of physicians calling for acetanilid under two or more names in the same prescription! More recently there was the ridiculous duplication of names for hexamethylenamin (Urotropin, Cystogen, Aminoformin, Uritone, Urisol, Cystamin, etc.), and later yet the even greater duplication in the case of phenolphthalein (Exurgine, Problin, Prunoids, Laxine, Phenolax Wafers, Lexaphen, Phenalein, Thalosen, Laxothalen Tablets, etc.). Had Frederick Sterns & Co. been content to market their brand of benzyl succinate under the descriptive name, "Benzyl Succinate (Sterns)," the product, so far as the name is concerned, would have been acceptable to New and Non-

official Remedies. Such a name would give the firm putting out the product all the legitimate protection that a firm should desire, while at the same time giving the physician who might wish to prescribe the product full information about its composition.—*Journal A. M. A.*, Dec. 16, 1922.

HERE'S A BIG RESOLUTION FOR A VERY HAPPY NEW YEAR.

ROYAL S. COPELAND, M.D.

Two hundred years ago Francis Bacon wrote an essay on health. It contains much real wisdom this New Year's day.

"To be free minded and cheerfully disposed at hours of meals and of sleep and of exercise, is one of the best precepts of long lasting. As for the passions and studies of the mind, avoid envy, anxious fear, anger fretting inwards, subtle and knotty inquisitions, joys and exhilarations in excess, sadness not communicated. Entertain hopes, mirth, rather than joy, variety of delights, rather than surfeit of them; wonder and admiration, and therefore novelties; studies that fill the mind with splendid and illustrious objects."

Sometimes doctors sneer a little at folks who talk much about the effects of mind on matter. But no wise man can overlook the significance of the mental state in its effects upon the physical well-being. Digestion is impaired and actual illness brought on by anger or other deep emotions.

To have discord at the table, squabbling, argument and disputation, is almost equivalent to turning the bread and meat into leather and sawdust. There is no manner of doubt that anger interferes with digestion.

Bacon was right when he said that long life is promoted by being cheerful at meal time, on retiring and during exercise. Many a night's rest has been lost by going to bed wrathful or unhappy. Many a meal has lost its value by quarreling at the table.

In every office, in every group, there are quarrelsome persons and peacemakers, unhappy mortals and sunshiny ones. Have you ever observed what a restraining and ennobling influence is possessed by an occasional person?

"Red-headed" persons are supposed to be

1. Esterol Not Admitted to N. N. R., Propaganda Department, page 2102.

more fiery tempered than other folks. I once had a red-haired office assistant, with snapping eyes and all the other physical characteristics of a person of violent and explosive temper. But, in all my life, I never met her gentle equal. Quiet, calm, sweet-voiced, smiling and courteous—the very atmosphere of this person quieted many a storm, and added to what Bacon called “long lasting.”

There can be no question that the mental state has much to do with the physical well-being of the individual himself, as well as with the happiness of his associates.

Disciplinary measures with a child are always hard for a loving parent to administer. But they must be used. Children must be taught good behavior and self-control, not alone because we expect everybody to have kindly manners and poise, but also because the health and physical welfare of the child depend on his mental habits.

Bacon advises us to entertain hopes, joys, wonder and admiration. This is excellent advice. I am ashamed of folks who can never wonder or admire. They are so blase—or pretend to be—that nothing excites their wonder or admiration. If they are really not excited they are abnormally constituted, and if they merely pretend not to be moved they are humbugs.

I like to see people who can become enthused and somewhat exhilarated. They need not have “joys and exhilarations in excess,” to quote Bacon, but they should have them enough to stimulate the action of the heart and lungs. Such an experience is like a house-cleaning to the brain. It sends the blood in forceful stream to every part of the body, where it acts like soap and **water** to cleanse the tissues.

Let us be “free-minded and cheerfully disposed” all the time! This is a good hour—this hour which is one of the first of the new year—to decide to follow this fine way of health. Let's add it to our good resolutions—and may this be the best year, the happiest and the healthiest year you and your loved ones have ever known.

EXERCISE TOLERANCE IN HEART DISEASE.

In persons recovering from protracted infectious diseases, the time to permit any physical activity and the amount of increase advisable from day to day can be intelligently determined only by an exercise tolerance test. If persons in whom heart disease has been diagnosed, who show nothing abnormal except a systolic murmur over the heart, tolerate vigorous exercise, it does much to dissipate the apprehension they may feel about taking exercise and strengthens the physician's conviction that he is dealing with a normal heart. This, perhaps, will make unnecessary the advice so often and so solemnly given these patients to be cautious about physical activity. Persons with valvular disease show the greatest variation in their exercise tolerance whatever the exercise may be, swinging dumb-bells, climbing stairs, walking, etc. Only by determining their exercise tolerance, says Theodore B. Barringer, Jr., New York (*Journal A. M. A.*, Dec. 30, 1922), can the amount of physical activity most suitable for them be prescribed. There are certain patients with advanced mitral stenosis who have a very small exercise tolerance. These patients have to be extremely careful about their physical activities. They improve but slightly, or not at all, on graduated exercise, and they have to take digitalis almost continuously. Patients with aortic valve disease stand physical activity, as a rule, better than those with mitral stenosis. When they show a persistently low exercise tolerance, the duration of life is generally short. Barringer believes that as time goes on the validity of the exercise tolerance test for determining the condition of the heart's functional capacity will become generally recognized, and our knowledge of heart disease will be much enriched through the facts acquired by this comparatively new method of cardiac diagnosis.

“MAP-CHANGING MEDICINE.”

A prophet declares wonders that are to come. Let an old man say soberly of a strange thing that was done—and has been, nigh hand, forgot.

But, first, this boiling down of the prophecy:

William Joseph Showalter holds forth through twenty-seven pages of text and numerous illustrations on "three announcements of almost unprecedented import to mankind" that are shortly to be made.

First. That yellow fever has at last been banished from the face of the earth.

Second. That hookworm disease, a vitality destroyer in a zone embracing half of the world's population, can be eradicated from any community that has the will to be rid of it. (Showalter said "get rid of it," but the other seems, somehow, to sound better).

Third. That malaria can be eradicated from any community that has enough vital force left to push a campaign.

Good tidings, truly—and true tidings, goodly told, no doubt. Indeed, one need hardly be the seventh son of a seventh son to bring them. Scientifically, if not practically yet, all of the three things are today possible. And what a sweet world it were without the demon of the Yellow Death; without the enervating worm with the hook on his head; without the chills and fever that, through so long a while, has taken man by nape-o-the-neck and slack-o-the-breeches and shaken his ambition to shreds! Showalter shows just how it is to be done, just what forces are being trained upon the doing of it, just what results will be accomplished and where they will be operative. It is one of that kind of good article that has made the *National Geographic Magazine* a world wonder.

That for the prophecy—this for the chronicle!

It should be known of men how this thing began, how science was put in the way of finding out that the germ of malaria and the germ of yellow fever must spend a part of its life in the body of a mosquito and another part of its life in the blood corpuscles of a human being. How, if you destroy all the human beings or all the mosquitoes, the other will forever afterwards be free of the disease. Yes—destroying mankind would as effectively rid the world of malaria as would destroying the mosquito race, but since the human race

is a bit better organized, it is the mosquito that must go.

Here is the beginning of it. It may sound, at first, like a tale gone far afield. But bide a wee, as they say in Thrums.

You remember—or, if you don't remember, you have read—how, in the old range days, great herds of long-horned cattle were driven up, as the season advanced, out of Texas into Oklahoma and Kansas and on north. Wherever these Texas cattle went, there came a strange disease—not among the Texas cattle themselves but among the native cattle wherever these steers of the Lone Star passed. Nobody understood it, but they guessed that it came somehow, in a manner beyond the wisdom of science, from the Texas cattle. They called it, therefore, Texas fever, and strove to cure it or to prevent it, but nothing came of the effort.

Then, finally the United States Department of Agriculture sent a couple of "horse doctors" out there to see what they could pick up. They picked up a tick, took it back to the scientific world and said, "Here's the cause of Texas fever." The scientific world laughed—loudly, but a bit unnaturally. "The romance of pathology"—that is what they called the announcement of the veterinarians.

But these "horse doctors" gathered a goodly lot of the ticks down in Texas, carried them in hand satchels to the northern regions and scattered them over the pastures where no Texas hoof had ever trod. The native cattle took "Texas fever" and died. The "horse doctors" had proved their romance real, and the scientific world got busy. Insect causation of disease was established and the finding of the way to eradicate malaria and yellow fever was not then so very difficult. No great while after the discovery, it made possible the digging of the Panama Canal. The French could not accomplish the job in the face of "Yellow Jack." But Gorgas, with the discovery of the "horse doctors" in his possession, made the isthmus almost as safe a place to live in as a sterilized bottle. And the canal went through, slides notwithstanding.

All of the other wonders that Showalter foreshadows will doubtless come, too. Here

are some of the organizations back of the movement: The United States Public Health Service, the health departments of the several states, the British School of Tropical Medicine, the India Office, the Dutch Institute for Tropical Medicine, the French Institute of Tropical Medicine. Here is a group of allies that can hardly be defeated. And, when the goal is reached, it would not be amiss to raise a memorial of some sort to the "horse doctors" who started the thing. One of them, incidentally, is still working on a veterinarian's salary in Washington.—*Nashville Banner*.

BOOKS RECEIVED

THE ELEMENTS OF SCIENTIFIC PSYCHOLOGY

By Knight Dunlap, Professor of Experimental Psychology, John Hopkins University. 368 pages. Illustrated. St. Louis. C. V. Mosby Co., 1922. Price \$3.50.

Psychology normal and abnormal are coming to play a continually increasing part in modern medicine. That generally well informed people should know so little about that faculty or function of the human organism which lifts man above all other things, the mind, is one of the strangest things of life. It has been and is to scientists outside of the such knowledge as we have acquired about this of our information it has come to be recognized subject. As additions have been made to the sum medical profession to whom most credit is due for that many states of disease, not alone in the field of the psychiatrist but in all branches of medicine, are greatly influenced by mental factors. To those reactions and those states of mind influenced by or themselves influencing unnaturally the human body, the term Abnormal Psychology is applied. But, before the abnormal can be properly studied or understood, Normal Psychology must first be mastered. Dunlap, in this work, limits himself almost exclusively to normal psychology and provides in his well written work a source of information which the student of psychology, from whatever angle he shall approach the subject, may obtain most useful assistance. The work though comprising about three hundred and sixty pages is not unduly cumbered by speculation and theorizing but reasonably limited to the practical. While it is not a work that the average man would take on his vacation for light reading and diversion, it is none the less one that any medical man might read with much profit and to the man who is especially interested in the subject this book will prove most valuable indeed.

J. W. S.

THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES, VOL. 2, 2, 1922. Containing Reports of the Council on Pharmacy and Chemistry and contributions from the A. M. A. Chemical Laboratory and from The Journal of the American Medical Association. Cloth. Price \$2.00. Pp. 603 with illustrations. Chicago: American Medical Association, 1922.

The present book is the second volume of the "Propaganda for Reform in Proprietary Medicines." The first volume ran through nine editions. The ninth edition contained (1) the most important reports of the Council on Pharmacy and Chemistry, (2) the reports of the A. M. A. Chemical Laboratory, and (3) those articles from The Journal of the American Medical Association which deal with the problems of proprietaryship in medicine and the furtherance of rational drug therapy. All of this material covered a period prior to 1917.

The present (second) volume contains similar material covering the period from January, 1917, to April, 1922, inclusive. Like Volume 1, this volume is divided into four parts:

Reports of the Council on Pharmacy and Chemistry: This section presents the principles and rules which govern the Council in the examination of medicaments, contains articles and reports bearing on the work of the Council as well as the most important reports of the Council from 1917 to April, 1922, inclusive.

Reports of the A. M. A. Chemical Laboratory: This, besides presenting the aims and objects of the Association's Chemical Laboratory, also outlines some of the Laboratory's work which is of special interest to physicians.

Contributions from The Journal: Proprietary Products: This contains articles which have appeared in The Journal A. M. A. on proprietary preparations and their methods of exploitation.

Contributions from The Journal: Miscellany: In this section are articles dealing with matters of interest to the medical profession but not coming strictly under the classification of proprietary medicinal preparations.

A comparison of the material that has appeared in Volume 1 of the Propaganda for Reform with that which appears in this volume will reveal the changing conditions in the proprietary medicine field. Many of the reports in the first volume brought out the fact that medicinal preparations were at that time foisted on the profession with false claims of composition; reports of this character are less conspicuous in the present volume. Many of the reports in Volume 2 deal with unwarranted therapeutic claims, especially those advanced for animal organ preparations, serums, vaccines, preparations for intravenous medication, etc. The present volume will also be found of interest in its portrayal of the changed conditions in pro-

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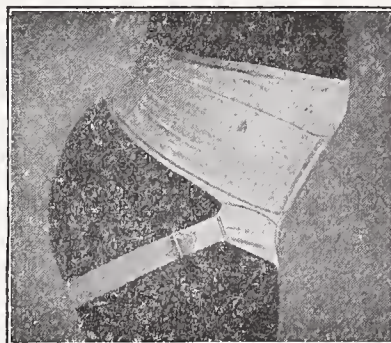
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prietary medicines brought about by the World War.

The index in this new volume is, in effect, a bibliography, including references not only to articles in the book but also (a) to articles which appeared in Volume 1; (b) to articles on the same general subject in *The Journal of the American Medical Association*, and (c) to articles appearing in the annual reports of the Council on Pharmacy and Chemistry and of the A. M. A. Chemical Laboratory, but not printed in either volume of the *Propaganda for reform in Proprietary Medicines*.

This book is not only valuable for the information it contains, but it is also interesting. It shows up the technique of the artist in the sale of proprietary medicines, tells of his skillful word-pictures that are sent to the physician as "literature." It makes clear the work of the Council on Pharmacy and Chemistry, the A. M. A. Chemical Laboratory and *The Journal of the American Medical Association* in their several capacities as servants to the medical profession and as champions of rational medicine. The book should be in every physician's library, and more than that, should be within reach for convenient reference.

DISEASES OF THE EAR, NOSE AND THROAT, MERICAL AND SURGICAL, By Wendell Phillips, M.D., Professor of Otology, New York Post-Graduate Medical School and Hospital; Surgeon to Manhattan Eye, Ear and Throat Hospital, etc. 6th Revised Edition. 881 pages, illustrated with 578 Half-tone and other Text engravings, including 37 Full-page Plates, some in Colors. Philadelphia, 1922. F. A. Davis Company, Publishers, Price, \$8.00 net.

This work has enjoyed a long usefulness as a textbook and this the sixth edition is freshened by the elimination of some of the older operations and ideas.

The chapters on laryngoscopy and bronchoscopy are excellent and the illustrations, not only under these subjects, but in the entire book, are very good, the cuts showing various operations upon the sinuses being very clear and helpful.

The section on bacteriology possibly needs some additions, while the chapters on general diseases are able.

The arrangement of the book, as a whole, is convenient, well indexed and is a valuable book in its class.

R. S.

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THE COUNCIL OF THE STATE MEDICAL ASSOCIATIONS.*

OLIN WEST, M.D., SECRETARY, AMERICAN MEDICAL ASSOCIATION, CHICAGO

Composition of the Council and its Duties

ARTICLE VI of the constitution for state medical associations, prepared at the time of reorganization by the Committee on Organization of the American Medical Association, reads thus:

The Council shall consist of the Councilors, and the President and Secretary, ex-officio. Besides its duties mentioned in the By-Laws, it shall constitute the Finance Committee of the House of Delegates.——— Councilors shall constitute a quorum.

In the by-laws prepared to accompany the constitution proposed by the Committee on Organization, the duties of the council of the state medical association were outlined in Chapter VII. Briefly stated, these duties as defined are:

1. (a) The council shall meet on the day preceding the annual session; daily during the annual session, and at such other times as necessity may require, subject to call of the chairman or on petition of three councilors. (b) The council shall meet on the last day of the annual session to organize and outline work for the ensuing year. (c) The council shall elect a chairman and a clerk, who, in the absence of the secretary of the Association, shall keep a record of its proceedings. (d) The council shall, through its

Read before the Annual Conference of Secretaries of Constituent State Medical Associations, Chicago, Nov. 17-18, 1922. From the A. M. A. Bulletin.

chairman, make an annual report to the house of delegates.

2. (a) Each councilor shall be organizer, peacemaker and censor for his district. (b) Each councilor shall visit each county in his district at least once a year for the purpose of (1) organizing component societies where none exist; (2) inquiring into the condition of the profession, (3) and improving and increasing the zeal of the county societies and their members. (c) Each councilor shall make an annual report of his work, and of the condition of the profession of each county in his district at the annual session of the House of Delegates.

3. (a) The council shall be the board of censors of the association. It shall consider all questions involving the right and standing of members, whether in relation to (1) other members; (2) the component societies; or (3) the state associations. (b) All questions of an ethical nature brought before the House of Delegates or the general meeting shall be referred to the council without discussion. (c) The council shall hear and decide all questions of discipline affecting the conduct of members or component societies on which an appeal is taken from the decision of an individual councilor, and the decision of the council on all such matters shall be final.

4. The council shall have authority to organize the physicians of two or more counties

into societies to be designated suitably so as to distinguish them from district societies.

5. (a) The council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association. (b) The council shall pay over to the treasurer all money received by it or its agents. (c) The council shall annually audit the accounts of the treasurer and secretary and other agents of the Association, and shall present a statement of the same in its annual report to the House of Delegates, which report shall also specify the character and cost of all the publications of the Association, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary. (d) The council shall fill any vacancy occurring in the offices of the secretary or treasurer until the next annual election.

6. The council shall (a) approve requests of county societies for charters before they are issued by the House of Delegates, and (b) may recommend the revocation of charters by the House of Delegates.

7. The council in hearing appeals may admit oral or written evidence that, in its judgment, will best and most fairly present the facts; but, in case of every appeal, both as a board and as individual councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Perfection of Organization and Maintenance of its Efficiency

It is evident that the constitution and by-laws prepared by the Committee on Organization, and presented to all state medical associations for adoption, intended to make the council the chief instrument for (1) effecting and maintaining organization; (2) stimulating the interest and zeal of members and component societies in organizational and professional affairs; (3) deciding questions at issue between individual members, between members and societies, and between component societies; (4) composing all differences by conciliation or compromise when possible; (5) safeguarding the interest of the profession by securing observance of the principles of medical ethics; (6) protecting the rights

and privileges of the individual member and of the individual society; (7) maintaining the ideals of the organized medical profession. These are the major duties of the council.

The provisions contained in the original constitution and by-laws for the state associations, in which the council was designated as the "finance committee," are altogether secondary and of far less importance to medical organization than those through which the council was made the board of censors, the organizers, the conciliators and the judicial agents of the association. It appears, however, that the present tendency is to have the council serve first as a business committee, and secondarily, as the organizing and judicial arm of the state society. This, in the opinion of many who have been observing the trend of affairs, is greatly to be deplored. The council should have as its first—if not as its only—purpose the upbuilding of medical organization and its maintenance on the highest possible plane of efficiency. The performance of this duty will involve many activities on the part of the council, none of them having to do, except incidentally, with the financial and general business affairs of the society. These may all be easily and well cared for through the provisions made, with remarkable foresight, in the constitution and by-laws for state associations prepared some years ago, by the American Medical Association Committee on Organization.

Constitutional Amendments

This constitution, with the by-laws, was adopted by a number of state associations without change; others made only such changes as were necessary to make the instrument conform to charters issued by the state; still others made very extensive and material changes. Thus, it has come about that the organic laws of the various state associations have exhibited very considerable difference. Lately, these differences have, by amendments to the constitutions in the several states, become more numerous, and, in some instances, much more marked. The changes have affected the council more, perhaps, than any other part of the organization machinery.

Changed Conditions

In the days when state medical associations had relatively small memberships; when "transactions" were published annually and there were no state journals; when the activities of the societies were largely limited to purely scientific discussions and to the proper safeguarding of the ideals; when a few hundred dollars represented the annual income and outgo of even the largest of the state organizations, it was altogether proper for the council to be designated the business committee of the state association. But it is unfortunate that, as the years have gone by and the activities of the state associations have increased and expanded, this function of the council has been magnified, while its fundamental purposes and duties have been minimized—and too often almost entirely neglected.

Centralization and its Avoidance

In some of the state associations, the council is almost absolutely dominant. To it is referred practically every paper and every report and every proposed transaction. Public policy, legislation, finance, propaganda and everything else must have the attention of the council before the House of Delegates or the general session can consider it. Then, if there is any time left or if there is any inclination for so doing, organization, society interest and welfare, ethics and professional relations receive the scant attention that it is possible to give them. This is all wrong, because nothing a medical society can do—no matter how big it is or how much money it has—will be done effectively unless it is organized on the right basis, composed of the right sort of men, and operated in every detail in keeping with the time-honored ideals of the medical profession, to insure all of which the council is needed and toward the maintenance of all of which its first and its last duty lies.

The centralization of power in any one body or group of a state medical association would not seem to be wise, even though that be the council. If the council performs well its duties relative to organization and to making the component county societies what they should be, and functions actively as a board of censors, it will do more than could any

other agency to prevent the development of privileged groups and the centralization of power, because when its duty is well done more members will participate intelligently and actively in the affairs of the society. It is a very important part of the duty of the individual councilor, and of the council as a body, to put forth effort to secure the affiliation of every available qualified man and to improve and increase the zeal of the county societies and their members. As zeal is improved and increased, wholehearted interest and participation in medical society affairs will also improve and increase. More men and better men will be available then for committee duty and for other work.

It is doubtful whether more than 10 per cent of the members of the medical societies participate actively in the scientific work or in the other legitimate activities of these organizations. An examination of the monthly and annual programs of county, district and state medical societies will reveal the same names of contributors to these programs in almost unchanging constancy; an examination of the personnel of the committees of medical societies will show that practically the same men are assigned to committee duties year after year; an examination into the character of the work of such committees will reveal the fact that the larger number, perhaps, postpone any consideration of their duties and defer the preparation of their reports until the very last moment, and that a very considerable number fail altogether to perform any of the duties assigned to them. There are few state associations in whose houses of delegates more than half of the component societies are represented, which situation shows a deplorable lack of that "zeal" whose maintenance is provided for in the by-laws. The board of censors of the local county medical association, if active in discharging their most important duties, can usually bring about a change in this condition of affairs.

Need for Exercising the Judicial Function

It is necessary that the judicial functions of the state association council be exercised. While it is highly desirable that every qualified man should be affiliated with his county medical society, state medical association and

the American Medical Association, it is not at all desirable that unqualified men should be brought into affiliation, unless there is a very good basis for belief that such men can be helped with respect to their scientific equipment and brought to appreciate the righteousness of the principles of medical ethics and the holiness of the true ideals of the real medical profession. It is not always true that "in numbers there is strength." On the other hand, it may easily be true that mere numbers will produce really serious weakness. Very recently this has been demonstrated in one of the county medical societies of this Association. Charges were preferred against a member of this society in which he was accused of being guilty of a heinous practice. The censors of the society, men of established high character, heard the evidence that was presented and unanimously voted to sustain the charges. Their report to the society was to this effect, and their recommendation was for expulsion of the accused member. Under the constitution and by-laws adopted by most of the county medical societies, a three-fourths vote is required to expel a member on recommendation of the board of censors. In this particular instance, a little less than three-fourths vote was registered in favor of expulsion. One who was familiar with the personnel of the membership examined the membership roll of the society and selected from it the names of practically all of those who opposed the expulsion of the convicted member. This situation may have been made possible because of the reception of members into the society for the purpose of increasing its membership, even though it was done at the expense of the quality of such membership. Within the last two or three weeks, five Fellows of the American Medical Association in three different states have been discovered to be rank advertisers. A careful board of censors in the county medical society, and an active and watchful councilor in each district of the state association could do much to prevent the development of such unpleasant and undesirable situations.

Secretary Cannot and Should Not Do It All

At a recent annual meeting of a state medical association, only six of the fourteen coun-

cilors presented reports. One councilor, a splendid physician and a man of prominence in the Association, frankly stated that he had no report because he knew of nothing to report that was not already known to the secretary. Whereupon others of the delinquent councilors made similar statements. All of these were undoubtedly chosen to serve as councilors because of their high standing, yet none of them had the faintest conception of the duties of a councilor, and all of them were derelict. A good secretary is supposed to be familiar with general conditions, and, to a certain extent, with the details of the situation in all counties; but he cannot distribute himself over the territory of fourteen councilor districts to perform the important duties of as many councilors. The tendency which undoubtedly exists to "leave it to the secretary" is an evil tendency. The best of all secretaries cannot do it all, nor should he be allowed to if he could.

Opportunity for Service

"Organizer, peace-maker, censor" for his district, visitor to all county societies in his district, reporter to the house of delegates—the individual councilor has opportunities for helpful service that are offered to no one else. As the board of censors, as the devisors of plans and methods for making county societies more effective for good, both to their members and to the community, as conciliators and judges, the council will render a service through which successful operation of a state association can be insured, and without which successful operation cannot be hoped for. The individual councilor and the council as a body are indispensable, and the performance of their duties in the capacities noted above should not be interfered with by loading them down with other duties—as, for instance, finance, legislation and general business.

Qualifications of Councilors

The council should be a band of "elder statesmen." This does not mean that its members should be all old men, but rather that they should be men of judicial temperament, yet with open and kindly hearts, and men with discretion born of ripe experience in the practice of medicine and in organization work. They should be—they must be—

men who command the whole-hearted respect and esteem of their fellows, and men who find pleasure in serving the societies that are in their charge. To serve acceptably in their most important capacity they need not be financiers, nor legislators, nor publicists. Let the house of delegates, with such committees and commissions of its members as it may need to do its work to best advantage, be the business and legislative body of the association. A board of trustees or an executive committee can transact business in the interim. Let the council attend to the less material, but even more important, matters of organization and professional relations.

Where Honor Is Due

It is a great pleasure to pay tribute to the splendid work that is being done by the councils in several of the constituent associations. The result attendant on the devoted service of the district councilors in our most efficient state organizations speak for themselves. They are apparent to even the casual observer—the very atmosphere is “different” where the well selected councilor is watchful and active; and there is none to whom more honor is due in the entire organization than to the faithful councilor who knows what his duty is and does it.

THE TREATMENT OF GLAUCOMA.

E. C. ELLETT, M.D., F.A.C.S., MEMPHIS.

THE treatment of glaucoma is a very important matter, since glaucoma must be treated. With very few exceptions it can be said that untreated glaucoma will certainly end in blindness. Acute attacks may subside and there may be apparent recoveries, but relapses follow, and even when the eye is quiet, the disease will be found to be present.

For therapeutic, as well as other reasons, the distinction must be drawn between acute and chronic glaucoma. Time permits of the consideration of primary glaucoma only, and no mention will be made of secondary glaucoma. It was probably not intended that this paper should enter into diagnosis, symptoms or other phases of the subject except the treatment.

The treatment of glaucoma is mainly local, but the local treatment will be greatly aided by rest and careful attention to all of the bodily functions, diet, sleep, freedom from worry and anxiety and the proper treatment of any of the cardio-renal-vascular disturbances so commonly seen in most patients with any form of glaucoma.

The medical treatment of glaucoma consists, in addition to the general measures already referred to, of the instillation into the eye of drops capable of contracting the pupil. Of these there are two in common use, eserine and pilocarpin. Eserine is the stronger, and also more apt to be irritating. It is used in solutions from $\frac{1}{4}$ gr. to the ounce to one per cent. Pilocarpin is used in solutions of one-half per cent to one per cent. Either drug should be used in sufficient strength and sufficiently often to maintain a maximum contraction of the pupil, since that is the visible evidence of the action of the drug.

In acute glaucoma we use, as adjuncts to the myotic, dionin and hot applications. While dionin is often prescribed to be used several times a day, my idea of its efficacy is in direct proportion as it dilates the lymphatics, and this property is quickly lost. Therefore dionin once a day seems to me most effective, and need not be continued more than three or four days. Unless some benefit is attained by that time, other measures than medicine are indicated. Hot applications seem effective if used with a hot towel for 10 to 15 minutes four times a day. The ap-

plication of a minute pad of lukewarm gauze or cotton to the eye can have only a psychologic effect, and a very feeble one at that. A generous pad of towel or gauze, rewed often enough to keep it hot, is necessary. Nothing else should be described as a hot application.

In chronic glaucoma the most efficient adjunct to the myotic is massage. I do not mean osteopathy, or chiropract, or applications of the equipment found in barber shops, but gentle, controlled massage with the tips of the two index fingers, the patient looking down and the manipulation practiced through the upper lid. The tension can be felt to fall, when it is accomplishing anything, and massage practiced this way, daily or oftener, is an undoubted help to the medical treatment. It must of course usually be left to the patient or some of the family, in which case the person who is to use it should be carefully instructed.

The surgical treatment of glaucoma has at different times covered a number of procedures. We may dismiss as of only historic interest the removal of one or more ganglia of the cervical sympathetic, stretching the nasal nerve and the introduction of foreign material into a wound in the eye for the purpose of securing drainage. I have seen some good results from such practices and have read of others, but they are not popular. Cyclodialysis is an operation rarely done, but which doubtless has a distinct but small field of usefulness. The operations usually practiced are iridectomy, the removal of a piece of the sclerotic, and a combination of the two.

Iridectomy is the oldest operation for glaucoma. By many it is still the operation of choice in all forms, and by the majority of oculists it is the one selected in acute glaucoma.

A piece of the sclera can be removed in several ways. A very popular way is to drill out a small button of the sclera with a trephine, the disk removed one and one-half to two mm. in diameter. Or a beveled incision may be made in the sclera and the tip of the scleral flap cut off with the scissors or a punch. The latter, known as the LaGrange operation and the trephine, known as Elliot's operation, are both popular. Many other in-

genious ways of getting out a piece of sclera have been devised. It is of no more importance to fuss over them than to argue about using a chisel or a gouge or a rongeur or a Gigli saw for a craniotomy. In any event you are doing a decompression operation, always under a flap of conjunctiva, and usually combined with an iridectomy, peripheral or complete.

The operation of iridotaxis should be mentioned. A knuckle of iris is drawn into a wound in the sclera and left. This is done under a conjunctival flap and has many warm advocates. It is a comparatively simple operation. Any of these operations can, and often need to be, done more than once on the same eye.

Now to apply these remarks. In acute glaucoma the treatment by eserine, dionin and hot applications should be tried. It sometimes succeeds, as in the following cases:

Mr. F. About 65 years old. Seen about ten years ago. He had an iridectomy for acute glaucoma, and later a cataract extraction in Buffalo. I saw him with acute glaucoma in the other eye, he being then in a desperate state with chronic nephritis, asthma, edema of the feet and high blood pressure. He was unable to lie down, and was no case for surgery. Eserine, dionin and hot applications relieved his attack, and he did not have a return. He only lived a few weeks after this experience.

The result, while sometimes good for a time, is often followed by relapses, necessitating surgery, as in the following case:

Mrs. H. aged 67, July 2, 1921. Acute glaucoma O. S. Vision 4/200. Incipient cataracts both eyes. Under treatment with eserine, dionin and hot applications the attack subsided. Vision 20/40. Eye was painful and red at times and was operated on (iridectomy) September 29, 1921. May 1922, tension normal. Vision 20/40. There has been no attack of pain or poor vision since the operation.

In many other cases the result is excellent. In fact we are rather inclined to give a good prognosis from operations in acute glaucoma, and many cases could be quoted to illustrate this fact. Two such will suffice:

Mrs. W. W. A. Age 45. Seen in 1909 when her eyes were normal and glasses fitted. In 1915 she developed uremia and on April 16, acute glaucoma O. S. and was operated on (iridectomy) with prompt relief. June, 1922, vision 20/20 with glasses, tension twenty-five McLean and the eye is well in every way. Fields normal.

Miss M. H. June, 1915. Age 54. Chronic glaucoma O. D. with pain except when using eserine. Vision 20/25. Tension thirty-seven mercury. Field contracted 6/12/15 corneo-scleral trephine with complete iridectomy. The next day she developed acute glaucoma in O. S.; and on the 15th the same operation was done, tension being forty-two mercury. April, 1922, vision 15/25 and 15/15. Tension twenty and seventeen.

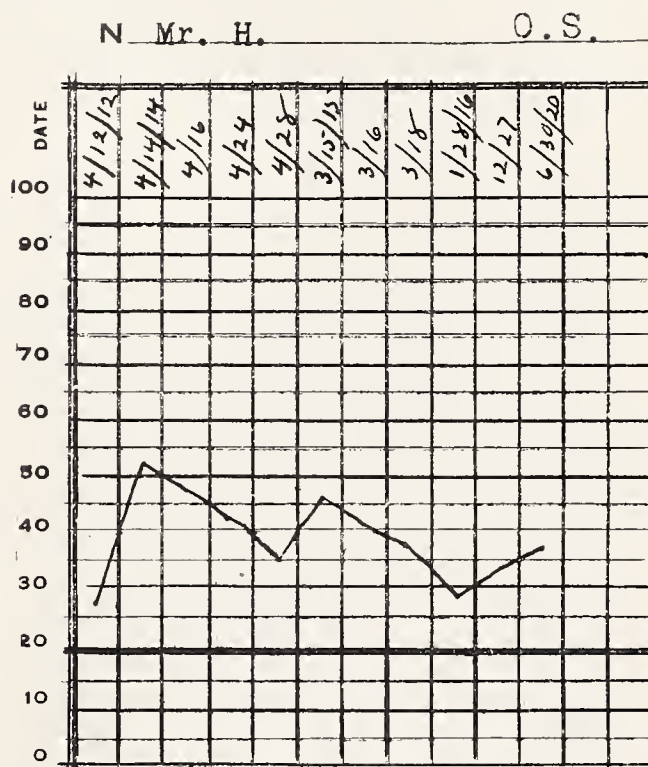
It sometimes happens that the pain will be relieved and the vision restored, but the damage to the nerve from the pressure is so great that atrophy progresses in spite of the relief of tension, as was seen in the following case:

Mrs. H. H. A. Age 66. October 27, 1908, was seen in an attack of acute glaucoma, which had been mismanaged by a general practitioner and an oculist for four weeks. Vision, moving objects. Was operated (iridectomy) at once with relief of all symptoms and restoration of vision. 3/19/07. Vision 20/40, field small. Not seen again for five years when the eye was found to be almost blind from atrophy of the optic nerve, the tension not having risen again. In 1920, I did an optical iridectomy on the other eye on account of incipient cataract. No signs of glaucoma.

In chronic glaucoma the condition is quite different from what prevails in the acute form. It will sometime happen that the medical treatment will hold the disease stationary for a very long time, as in the following case:

L. H. Age 65, seen in 1907. O. D. blind 4 years, and was the seat of high myopia, divergent squint and increased tension. O. S. vision 20/25 with glasses. Tension +1 and the disk was cupped. He has been treated medically, and in July, 1920, vision was 20/60, the reduction being due to lens opacities. The tension has been elevated all the time,

but the pupil is small and the fields slightly contracted. The first tonometer reading was in 1912 and the course of the tension is shown since then on the charts. For fifteen years the disease has been held stationary. In 1911, Dr. Minor saw the patient and advised to continue the medical treatment and not to operate.



In such a case we are justified in continuing the treatment, though an acute attack may set in after many years, as was seen in the case of:

Miss G. Seen in 1901 with chronic glaucoma O. U. Iridectomy O. S. in January, 1902. Vision 20/60. The eye has gradually lost all vision, but the tension is normal (26 McLean). Right eye showed signs of glaucoma in the shape of halos and increased tension (46-50 McLean). Under eserine and pilocarpin the vision and visual field remained normal for seventeen years, when she had an acute attack of great severity. This happened while I was in the Army and Dr. George Savage operated on her skilfully and successfully. In November, 1921, the tension was 23 (McLean). Vision 20/30 and field slightly contracted.

Failure of medical treatment is shown by the continued elevation of the intra-ocular tension, by the contraction of the visual field and by deterioration of central vision. Then

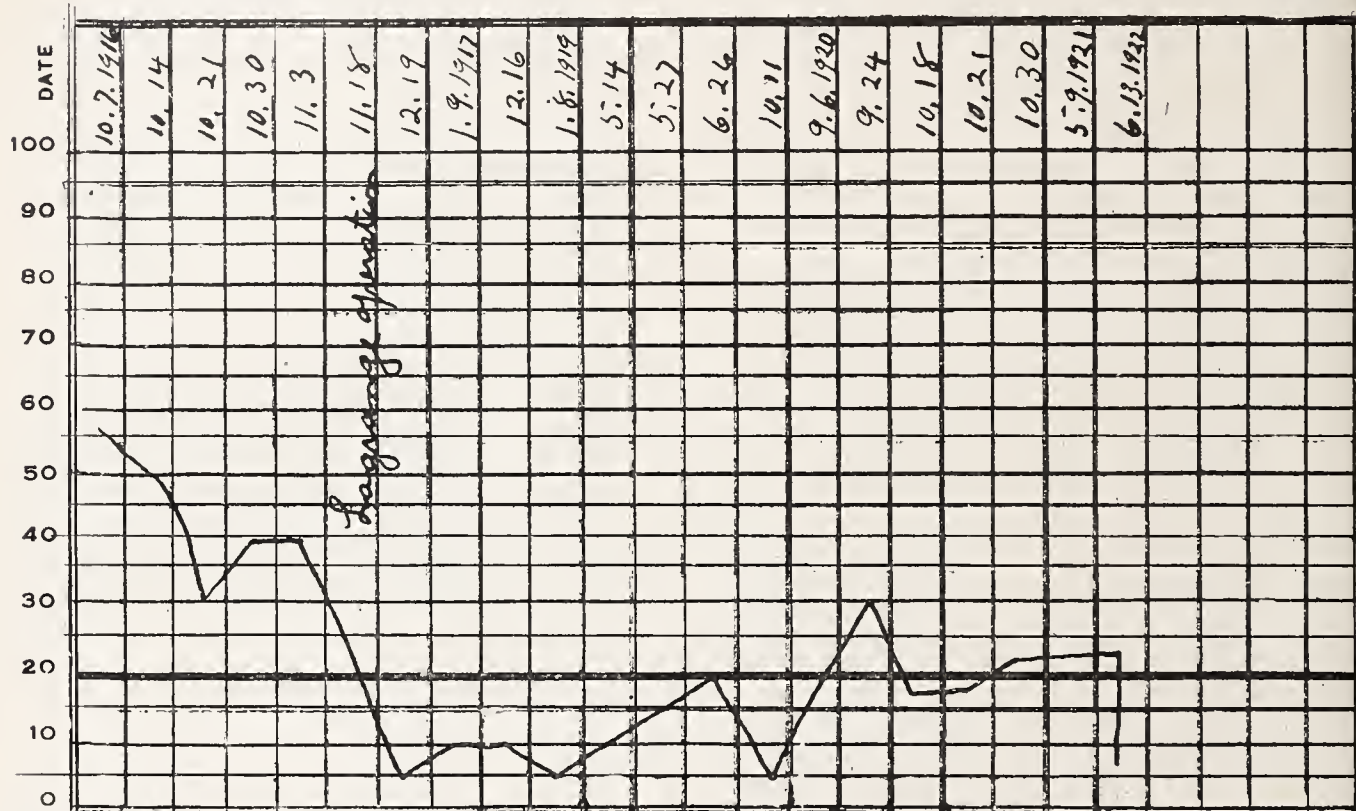
operation is indicated, as shown in the following histories:

Miss M. October, 1916. Chronic glaucoma O. U. in O. D. Tension 40/45 McLean. Vision 20/20. The nerve was normal. O. S. tension 70 (McLean). Vision 20/30. Nerve cupped. As there was no improvement in the eye under treatment, operation was advised, and after consultation with Dr. Minor a La-

Grange operation was done on the left eye November 8, 1916. June, 1922, vision 20/20—3. Tension normal. O. D. The course of the disease is shown on the tonometer chart and the field progressively contracted. Operation, as in O. S., October 22, 1920, on account of persistent elevation of tension and contraction of the field. The result June, 1922, is vision 20/20, tension normal and fields no worse.

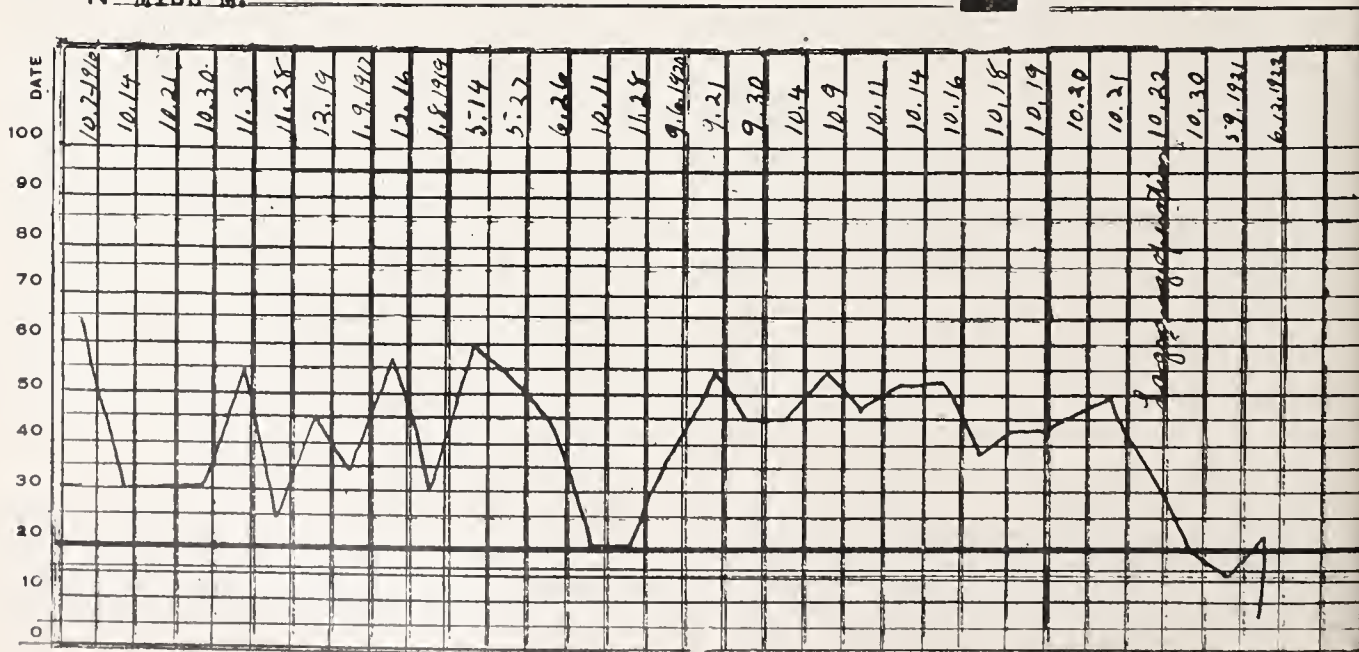
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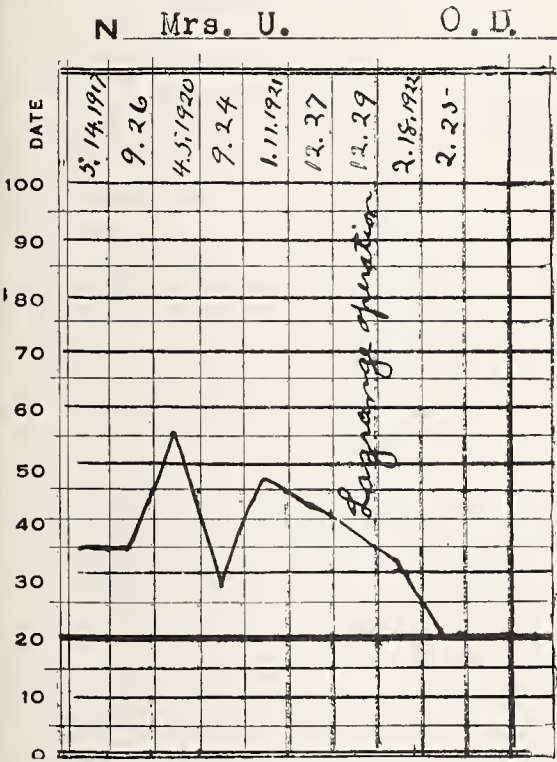


N Miss M.

O.D.



Mrs. U. May, 1917. Age 78. Glaucoma O. U. Vision R. 20/20, L. blind. Tension R. 55, L. 50 (McLean). In October, 1919, O. S. was enucleated for an attack of acute glaucoma. The right eye was put on treatment and the course of the disease was followed on the tonometer charts and visual fields. Operation was advised on O. D. on account of the contraction of the field, vision being then 15/30 and J 6. Hyaline deposits in lamina vitrea, simulating retinitis circinata. Operation (LaGrange) was performed on December 29, 1921, but the field of vision, which enlarged for a time, has again begun to contract and the vision has fallen, too.



Mr. R. A. I. Age 52, December 9, 1905. Poor vision O. D. Vision 20/60. Nerve cupped. Diagnosis chronic glaucoma. O. S. normal.

Under treatment the vision O. D. improved to 20/40. Patient stayed away two years and returned with vision 8/200 in 1908. Next seen in 1912 with vision, moving objects in right and 16/24 in left. Tension+1 and questionably plus. February 1912, LaGrange operation O. D. May 2, 1912, same O. S. June, 1922, vision O. D. fingers 1'. O. S. with glasses 20/30 partly and J 1. Tension normal.

This very sketchy paper may be concluded as follows:

In acute glaucoma, medical treatment should be given a short trial. If it fails or relapses occur, operation should be advised. In general it is better to operate for acute glaucoma under general anesthesia.

In chronic glaucoma treatment should be given a longer trial except in those patients who we believe will not follow out the treatment. It does not cure and must be kept up as long as the patient lives. He may be given the option of medical or surgical treatment, but if the medical treatment does not maintain a normal tension and hold the visual field and the central vision from deterioration, operation should be advised.

I know of no disease of the eye more difficult to handle. The tantalizing reward of restored or preserved vision stimulates our efforts, and failure to achieve this result raises the question whether the failure is not the fault of the physician. The operative treatment of glaucoma is difficult, taxing the resources of the most skilful, and full of dangers for him whose judgment and technique are not alike sound.

HEAD INJURIES.*

T. G. POLLARD, M.D., F.A.C.S., NASHVILLE.

WHEN this title was given in, I did not know just what I would try to emphasize. Afterwards, however, I decided upon a short paper bearing more particularly upon the use of lumbar puncture and the manometer in these cases.

Any injury to the head with force sufficient to fracture the skull produces brain injury, such as edema, laceration and hemorrhage. The fracture itself, except in depressions or basal fractures at the site of avenues for the entrances of infection, is of minor import. There are a good many cases of fractured skull that might be classed as x-ray fractures. The patient comes in with a history of injury and for a time is unconscious, and then comes to, complaining of headache and general uncomfortable conditions without paralysis, the general condition fair, and the x-ray discloses a fracture which amounts to nothing except from the fact that there soon arises the pathological condition of hemorrhage, oedema and laceration.

Lumbar puncture in this type of fracture, as in other types, will aid very materially in arriving at a correct conclusion as to the brain injury. In any of these pathological conditions the spinal fluid pressure will be increased. It might be well at this point to refresh your minds upon the circulation of the cerebro-spinal fluid, because in these cases it is the changes in its circulation that we depend upon a great deal for a diagnosis.

In the *Journal of the American Medical Association* October 21, 1922, Jackson of Chicago, has an article upon the "Circulation of the Cerebro-Spinal Fluid," from which I will give the circulation:

"For a long time it was thought that the cerebro-spinal fluid acted mechanically only as a water bed for the brain to preserve it from injury within the bony walls of the

cranium, and that its amount remained more or less stationary; but we now know that it has a definite circulation through a regular pathway which leads from the ventricles by a series of aqueducts, and cisterns toward the cerebral sinuses. From its origin in the lateral ventricles, the fluid passes through the foramen of Munro to the third ventricle, and thence along the aqueduct of Sylvius to the fourth ventricle, where it escapes through the terminal opening of Magendie and the lateral clefts of Luschka to the subarachnoid spaces at the base of the brain beneath the tentorium cerebelli; here are located the large cisterns of the medulla and cerebellum, and from these cisterns the fluid follows two main paths. The larger part rises over the surface of the midbrain through the narrow incisura tentorii to both the surface and sulci of the cerebrum and to receive accretions from its perivascular channels; the smaller portion descends along the ventral aspect of the spinal cord to the cauda equina, and returns along its dorsal aspect to augment that stream which bathes the cerebrum. These two streams along the cord are only partially separated by the ligamenta denticulata and the spinal nerves, between which they communicate along the length of the cord.

In ninety-five per cent or more of the severe head injuries, with or without fracture, there is contusion of the brain or meninges. And in practically all cases of brain lesions there is an increased intra-cranial and spinal fluid pressure. There may be cases, no doubt, in which there is little or no increase in the pressure of the spinal fluid, but an enormous increase of intra-cranial pressure. This has been explained by a dislocation downward of the brain blocking the foramen magnum and shutting off the spinal fluid from the effect of tension within the cranial cavity. In this type of case, too, you will observe a marked decrease in the pulse rate and an increase in the blood pressure.

*Read before Middle Tennessee Medical Association, Murfreesboro, November 10, 1922.

Considering that intra-cranial pressure is the main object of contention in these cases, by what symptoms do we recognize the condition? They are loss of consciousness, headache, slowing of the pulse rate, blurring of the optic disc, a steadily rising blood pressure, vomiting, and occasionally convulsions, or much better and more reliable is increased spinal fluid pressure as denoted by the manometer.

Every case of head injury giving symptoms should have the spinal fluid pressure taken six to eight hours after injury, or, in other words, as soon as the shock is over. At this time, too, the fluid can be allowed to escape and its character determined.

The normal adult spinal fluid pressure is 7 to 9 mm. Hg. In severe brain injuries, it may go as high as 60 mm. In using the manometer for this purpose, the fluid is permitted to escape and you are in a position to know exactly what effect the withdrawal of the fluid is having upon the pressure. The instrument is both therapeutic and diagnostic in its scope, and I believe invaluable in

the treatment of these cases. I will not go so far as to say that by the use of the manometer and the withdrawal of the spinal fluid no case will ever need a trephine or the subtemporal decompression operation, but do say that they will have to take a different place than has even been given them in former years. Instead of being used generally, they will have to be employed only exceptionally. I now rarely see a case of trephining, while a little while back spinal puncture was rarely done. There may be some question as to how often the puncture should be done. I do not know that there is any hard and fast rule to go by, but it is governed to a great extent by the height of the original pressure found, also by the rapidity with which it reforms. In severe cases it may be repeated daily for six, seven, eight or ten days; then every three or four days until the pressure finally remains normal. In most of the severe cases, this can be accomplished in about ten days, but the patient must be kept in bed for two to three weeks afterwards.

SOME REMARKS ON THE ECONOMIC ASPECT OF SALPINGITIS BASED
ON TWO HUNDRED AND FIFTY-SEVEN CASES OF
SALPINGITIS.*

JOHN M. MAURY, M.D., F.A.C.S., MEMPHIS

THE economic aspect of salpingitis may be considered under the headings: mortality, length of the patient's stay in the hospital before operation, morbidity and sequelæ which may more or less incapacitate the patient after leaving the hospital.

Consideration of this subject resulted from an attempt to lessen the load on the public because it is in our charity hospitals that most cases of salpingitis are treated.

The 257 cases studied comprise all those with a primary diagnosis of salpingitis oper-

ated upon by me in private practice and in the Memphis General Hospital since the inauguration of the record system in 1916. By a primary diagnosis of salpingitis is meant those cases in which the predominant lesion was in the tubes in contradistinction to cases of fibroids, cyst adenomata, etc., in which salpingitis was present but of secondary importance.

In tabular form the points of interest are:

Mortality	2 cases	.0078
Morbidity	33 cases	.129
Drainage-suprapubic after abdominal operation	5 cases	.019
Drainage by vaginal puncture without abdominal operation	6 cases	.023

*Read before the Tri-State Medical Association at Memphis, Tennessee, November, 1922.

Longest time in the hospital	79 days
Shortest time in hospital	14 days
Longest time in the hospital before operation	37 days
Shortest time in the hospital before operation	1 day
Average stay in the hospital	25.8 days
Average stay in the hospital before operation	9.2 days
Average stay in the hospital after operation	16.6 days

Mortality—Of the two deaths, one died from peritonitis on the third day and one from broncho-pneumonia on the seventh day. There was no autopsy on the case which died of peritonitis but the clinical manifestations left no doubt as to the cause. In the other case autopsy revealed a broncho-pneumonia with a limited chronic pulmonary tuberculous lesion, the abdomen being in healthy condition. The source of infection was not traced in the case of peritonitis.

The time spent by the patient in the hospital prior to operation is an important economic item. In our cases the shortest time was one day and the longest 37 days with an average stay of 9.2 days before operation. The study of this aspect of our subject resolves itself into a determination of the time at which the case should be operated upon.

In the beginning of pelvic surgery the fear that general peritonitis would occur if the diseased structures were not at once removed led to operating upon all acute cases; but it was gradually learned that this was a remote possibility, and in fact more apt to occur following operation in the acute stage than if the patient were treated conservatively and the operation done at a later time. The next important disclosure was that in cultures taken from tissues removed in the chronic stage the organisms had either died or had in great part lost their virulence, so that with the establishing of a certain amount of immunity the phagocytic forces of the body could dispose of any dormant infection remaining after operation, and this led to the knowledge that drainage was unnecessary. It was also determined that the mortality was less when operations were done during the chronic stage than when they were done during the acute stage and that more conservative surgery could be done in the chronic stage.

Doing away with drainage not only shortened the patient's post-operative stay in the hospital but removed a potential factor in the development of post-operative ventral hernia with its attending inconvenience and disability, not to mention the second operation which must be done in some for its relief.

Based upon these facts it has come to be a general rule that salpingitis should be operated upon only in the chronic stage and that cases presenting themselves for treatment during the acute stage should be put to bed and treated conservatively until a certain time after the acute stage has subsided. Surgically this time is after the organisms have died or become sufficiently attenuated in virulence so that they may be disregarded, and time enough has elapsed for the inflammatory exudates to have become more or less completely absorbed. This also gives time for the establishing of immunity by the patient. Economically this time is the earliest moment at which the patient can be operated upon with the greatest safety.

In the literature there appear from time to time articles advocating operation during the acute stage. Some of these operators get as low a mortality as do the advocates of delay and at first thought one might be under the impression that the patient's stay in the hospital would be greatly shortened. This, however, is not the fact since the large drainage pack, which they all use, delays healing of the wound to such an extent that the post-operative stay of their patients balances the pre-operative stay of the patients of those who advocate delay. We have not been able to find any statistics showing the number of ventral hernias occurring when wounds are left open for the exit of large amounts of drainage material but we feel sure that the number must be large.

While operations during the acute stage may in the hands of a few give a low mortality, the arriving at such a state of perfection in operating involves a long experience and the sacrifice of many lives and we think it pernicious to advise its adoption as a rule of practice. The condition is analogous to the status of the Wertheim operation when he published his mortality for the radical hysterectomy for cancer as being eight per cent.

He had arrived at that low figure only after having done the operation 800 times and the mortality for the same operation in the hands of the best surgeons in this country was still seventeen per cent and in the hand of the rank and file was from twenty-five per cent upwards.

On the other hand, there are those who advocate what we consider an unnecessary delay before operating. Simpson a few years ago made it a rule to wait for six weeks of normal blood count. His results were excellent and his reasons good but we feel that results practically as good can be obtained in a shorter time, especially in cases having already had one or more attacks.

Most of our cases came for treatment in the acute stage, the others with that variety of salpingitis which is chronic from the beginning or were in the chronic stage following one or more acute attacks. If a patient was in her first acute attack we preferred indefinitely to postpone operation until satisfied that she was not going to recover entirely from it. Recurrent acute attacks were treated with rest, hot applications, etc., and operation advised later.

In determining when to operate we rely upon the temperature, the blood count and the findings on pelvic examination. The temperature must have been under 99 F. for at least ten days and the white count must have been 10,000 or under for the same length of time. In addition, inflammatory exudates in the surrounding structures must have become absorbed so that the tubal outline can be made out and tenderness on examination must have almost completely subsided. If a rise of temperature follows examination further delay is advised. In the majority of our cases this pelvic improvement has been manifest in ten days but not in all of them, in which event sufficient time has been given for it to have been brought about.

It is true that in a few cases, usually when the streptococcus is present, there is no tendency for the organisms to die and the acute stage lasts indefinitely. In these cases we have employed the vaginal incision with drainage, not as a method of choice but of expediency. It is not an operation because

it does not remove the diseased structures and they have to be removed by an abdominal operation at a subsequent time; but even when no attempt was made to open tubal abscesses and nothing more than the insertion of a drain was done the temperature soon dropped to normal and the acute stage merged into the chronic stage as in the other cases where this procedure was not necessary.

The matter of post-operative stay in the hospital brings up a consideration of the morbidity. We had—

Wound infections,	17
Pelvic cellulitis,	6
Thrombo phlebitis,	2
Acute tonsilitis,	3
Acute bronchitis,	1
Broncho-pneumonia,	1
Fever from syphilis,	4
Peritonitis, spreading,	1
Peritonitis, local, pelvic,	1

Wound infection in six and one-half per cent is too high. As an economic factor it is of importance because it prolongs convalescence, increases expense for dressings and causes disability from resulting ventral hernias which occur in about twenty per cent of cases in which infection occurs. Furthermore, it is, theoretically at least, preventable. As predisposing causes to wound infection we believe that incomplete hemostasis, tight sutures, and the prolonged use of abdominal retractors are the most common factors. It is also possible that, in our endeavor to get the patient out of the hospital as soon as possible, we may have operated too early and gotten an occasional wound infection from septic material from the pelvis. This, of course, could be prevented by waiting a longer time before operating, until the organisms had lost all virulence.

There were six cases complicated by post-operative pelvic cellulitis, causing temperature for variable periods but none going on to suppuration. This we believe to be caused by an error in technique, the peritoneum and bladder being pushed down too far, opening planes of fascia along which infection can spread to the base of the broad ligaments. Probably further delay in operating would avoid this.

Tonsilitis and bronchitis need no comment as they are preventable by means with which we are all familiar.

In four cases convalescence was complicated by what, for want of a better name, we have called syphilitic fever. All of them had a four plus Wassermann, none had active manifestations of the disease, in none of them was there induration or tenderness in the pelvis and in none of them was there an increased white count though the temperature curve was decidedly septic in appearance. In all of them the first dose of salvarsan brought the temperature immediately and permanently to normal.

Supra-pubic drainage after abdominal removal of the diseased structures was employed in five cases because in these cases we believed, from the findings at operation, that we had erred in our estimate of the amount of pelvic improvement and thought drainage necessary to assist the natural forces of the body in the disposal of infectious material. Drainage through the vagina would have been better if the vagina had been surgically cleansed beforehand.

One case of localized pelvic inflammation after abdominal operation was drained through the vagina with recovery and might not have

occurred if the operation had been done at a later date.

We have given no figures on the occurrence of post-operative ventral hernia because we have had no follow-up system. At the time when the abdominal wound was closed by through and through sutures without separate suture of the fascia, ventral hernia occurred in from thirty to sixty per cent of cases operated upon. Anything which prevents active coaptation of the fascial edges like a drain or loss of substance from suppuration inevitably invites the occurrence of this condition.

Another and very important economic aspect of salpingitis involves a comparative study of the physical condition and domestic relations of these patients when conservative operations on the one hand and radical operations on the other have been done. For want of a follow-up system this could not be carried out.

The complete absence of post-operative intestinal obstruction and embolism was due, we think, to the care taken in covering all raw surfaces with peritoneum and the absence of post-operative hemorrhage from the slipping of a ligature to the cutting of the uterine and ovarian vessels before ligating them.

ENDOSCOPY.*

HILLIARD WOOD, M. D., F.A.C.S., NASHVILLE.

ENDOSCOPY as here used is limited to the direct visual examination and treatment of the air passages from the pharynx to the smaller bronchi, and of the food tract from the pharynx down to and including the stomach.

Historical

The first exploration of the trachea through a straight tube was made by Mikulicz in 1896. In 1897 Killian not only performed direct laryngoscopy, but removed a foreign body from a bronchus. In these earlier cases the

method of illumination seems to have been a head mirror. This necessarily had its limitations. In 1902 Einhorn devised a light carrier, consisting of a long, slender stem placed in the wall of the bronchoscopic or esophagoscopic tube, and carrying on its distal end a miniature electric light. This was the origin of "distal" illumination. It places the light in the distal end of the tube, in close contact with the foreign body, or pathologic condition, that is being examined. This method of illumination was adopted by Ingals and popularized by Jackson.

Bronchoscopy and esophagoscopy had been practiced thirteen years when the second epoch in this line of work was introduced.

*Read before the Tennessee State Medical Association, Memphis, April 11-13, 1922.

This was suspension laryngoscopy, which was first done by Prof. Gustave Killian on a cadaver in the Freiburg Anatomical Institute during the winter of 1909-10. With the head pendant a broad tongue depressor was introduced and supported by an arrangement of iron bars attached to the side of the dissecting table. Thus for the first time one could sit at the subject's head and, without using either hand, look directly down into the hypopharynx and see the interior of the larynx and the beginning of the esophagus. The apparatus for suspension laryngoscopy has since been greatly improved by Killian and, in this country, notably by Lynch.

Preliminary Considerations

Except in emergency cases every patient, before operation, should have a careful examination. Trite as this statement seems, it is just in these cases that everything else is forgotten, or neglected, and the sole wish of the family and, too often, of the family physician, is to have a tube passed and a supposed foreign body removed. A careful history should be taken. This, in the case of foreign bodies, is often pathognomonic. A thorough general physical examination by a competent internist should be made. Roentgenograms in all cases should be had. Indirect laryngoscopy, as made with the throat mirror, should not be omitted; and the patient should be prepared with a bath and an empty stomach as in the administration of a general anesthetic.

Classification

In classifying this subject the following subdivisions may be made:

- (1) Direct laryngoscopy, or looking directly into the larynx, without the aid of mirrors.
- (2) Tracheoscopy and bronchoscopy, which are in turn subdivided into:
 - (a) High tracheo-bronchoscopy, when the tube enters through the mouth.
 - (b) Low tracheo-bronchoscopy, when the tube enters through a tracheotomy opening.
- (3) Esophagoscopy.
- (4) Gastrosopy.

Anesthesia

The dangers of anesthesia seem to be twofold:

(a) The toxic effect of the anesthetic, local or general, on the brain centers.

(b) The mechanical obstruction to the ingress and egress of air; especially to the ingress, due to the collapse of the musculature of the throat, and the collapse of the vocal cords which, closing like a bivalve, prevent the entrance of air into the trachea and lungs.

The first danger is toxic, the second mechanical, though obviously both may, in a given case, be combined. The mechanical obstruction is most certainly overcome by passing a tube through the larynx into the trachea, through which air, or oxygen, may be insufflated. Or, as a substitute for the above, a tracheotomy may be done.

In discussing anesthesia, Meltzer has termed the mouth, pharynx, larynx and trachea as the "death space." This is true when some pathological condition is located here, and especially true when operations are being done on such conditions.

There is no phase of tube work which has elicited more discussion than that of anesthesia. From this liberal discussion certain principles have been evolved which may now be regarded as fairly well established. In presenting these it may be well to bear in mind that in medicine all rules have their exceptions. Among these rules are:

(a) As in these cases anesthesia adds one element of danger, we should, when practicable, dispense with all anesthetics, both local and general.

(b) The postulate laid down by Jackson and endorsed by Lynch of "No anesthetics in children and never in infants" should be lived up to by every operator as far as in him lies.

(c) Obstructive diseases about the larynx, especially in children, as laryngeal papillomata, add greatly to the danger of any anesthetic, whether local or general.

(d) Foreign bodies loose in the tract contraindicate any form of anesthesia, as they may become wedged into the glottis and completely obstruct breathing, leading to immediate death unless the foreign body be re-

moved, or dislodged, from the larynx, or an emergency tracheotomy be done.

(e) Cocaine applied to the trachea or bronchi is in general contraindicated, as it is seldom needed, and, by abolishing the cough reflex, adds to the danger of obstruction to breathing. To this rule, however, as to others, there are exceptions. I recall the case of a full-blooded man, who had in his right bronchus a gold band, originally intended to be placed around a tooth. Under ether I passed the bronchoscope down to the right bronchus. As the tube entered the right bronchus, the patient had a most violent fit of coughing. I tried several times to enter the bronchus, but always with such violent coughing, that I was afraid to try to grasp the foreign body. Hoping to stop the cough, I had the ether pushed to profound surgical anesthesia, but with no relief to the cough. I then passed through the bronchoscope down into the right bronchus a cotton swab wet with a solution of cocaine. This was held in place several moments and then removed. A minute or so later I was enabled to pass the forceps into the bronchus, pick up and remove the gold band, without exciting any cough.

(f) General anesthesia is contraindicated in removing foreign bodies from the esophagus. The spasm of the esophagus holds the foreign body in position. When this spasm is relaxed by general anesthesia, the foreign body may pass into the stomach. Two cases of this type have occurred to me, in each of which a metallic body was shown to be in the upper esophagus immediately before the ether was begun. It was not found by the esophagoscope, but was afterward shown by the x-ray or fluoroscope to be in the stomach. Practically the only pain in esophagoscopy is in entering the esophagus. The passage of the tube through the esophagus is not painful.

(g) I agree with the statement of McKinney that the more skilful the operator and the better trained his assistants—in a word, the better the team work—the less need for anesthesia. Anyone who has witnessed Jackson work must have been impressed with this fact.

In spite of the foregoing there will always be many conditions which, in the hands of the average operator, will continue to call for some form of anesthesia, either local or general. There are many cases which the average operator can handle successfully with anesthesia, but which he cannot handle without it. Among cases calling for anesthesia may be mentioned:

(a) Cases in which the technic is likely to be difficult or prolonged. It is too much to expect a patient, without anesthesia, to retain a bronchoscope in position for longer than a very few minutes.

(b) Where perfect quietude is necessary to enable the operator to carry out the technic, such, for example, as the removal of an open safety pin, and intra-laryngeal operations.

(c) There is a greater need for, and greater safety in, general anesthesia in suspension laryngoscopy than in bronchoscopy.

In using general anesthesia, the sources of danger should be kept in mind and guarded against, or at least prepared for. Cocaine should be used sparingly and its effect watched and increased gradually until it is seen whether one has an idiosyncrasy to it.

In using general anesthesia it should be seen that the air tract, from the mouth to the trachea, is kept open. Ordinary measures may suffice. If need be a tracheal catheter, or a bronchoscope, may be passed into the wind pipe through which the anesthetic, or air, or oxygen, as needed, may be insufflated. In using a bronchoscope for this purpose the proximal end must not be closed by the finger while air or any gas is being insufflated. The law of Crile, "The air pressure in the lung cells must never exceed the blood pressure in the vessels surrounding the cells, lest ischemia result," should be borne in mind. If for any reason the above cannot be carried out a tracheotomy, if needed, can always be done and through this the anesthetic, or air, or oxygen can be insufflated.

Regarding tracheotomy, I wish to make three observations, as follows:

(a) In obstructions above the windpipe such as laryngeal growths, the tracheotomy should never be done under general anesthe-

sia, but can, and should, be done under cocaine injected along the line of the proposed incision.

(b) A tracheotomy wound should not be closed by sutures, lest emphysema should develop, but should be left to close by granulation.

(c) Breathing through a tracheotomy wound is not the fruitful source of pneumonia which we have heretofore been taught, but a patient can, with comparative impunity, breathe through such a wound almost indefinitely.

In concluding this part of the subject, I will say that the personal equation of the operator and of the patient, and the character of the environment will, and should have much to do in settling the question of anesthesia.

Instruments

Many patterns of instruments, including laryngoscopes, bronchoscopes and esophagoscopes, have now been devised, used and recommended. No effort will here be made to describe them. Perhaps most operators prefer the type of instrument with which they have become familiar.

Having personally used both the Kahler-Leiter and the Jackson scopes, I much prefer the latter as being less complicated and more efficient. Of the two sources of illumination, the distal and the proximal, I have found the distal, which was devised by Einhorn and adopted by Jackson, more satisfactory. By placing the light at the distal end of the tube, it gives a better illumination of the operative field and, moreover, is out of the way of any instruments that may be used. The objections to it are mainly theoretical and its advantages are real. The introduction of the tungsten lamp has greatly added to the efficiency of distal illumination.

Direct laryngoscopes are made with and without removable slides. Through either the larynx can be inspected and treated, but only those with an open side, or removable slide, may be used as an aid to the introduction of bronchoscopes and esophagoscopes. If need be the direct laryngoscope may be used as an esophageal speculum, though the

latter usually requires a somewhat longer tube.

The source of the illumination may be an ordinary flash light battery, though Jackson has arranged a battery composed of dry cells, which is portable, and the amount of illumination from which can be regulated with great nicety. The ordinary commercial street current cannot be adapted to these miniature lamps, even with the aid of the most delicate rheostat.

Position of Patient

The patient may be sitting, lying on the side, or lying upon the back. The sitting position is permissible for inspection of the larynx, but is less adapted for broncho-esophagoscopy. In most cases the dorsal decubitus is preferred. In foreign body cases this position aids in preventing their passage deeper into the body; it favors the removal of secretions, either from the air passages or the esophagus; if only local anesthesia, or no anesthesia is used, it is the position in which the patient can be best held and controlled; if general anesthesia is used, it is the only position worthy of consideration; and, finally, if a tracheotomy should become necessary, it is the correct position for that, sometimes, emergency measure. The Boyce position seems to be the one best adapted to the majority of cases.

Mechanical Difficulties of Tube Work

In considering the mechanical difficulties of introducing straight stiff tubes into the air and food tracts, it is apparent that these difficulties divide themselves into two classes, to-wit:

(a) Muscular contractions about the throat.

(b) The necessity of converting a crooked into a straight canal.

The first difficulty, contraction of musculature of the throat, is to be overcome by the personal control of the operator over the patient and the use of anesthesia, local or general.

The second difficulty, that of converting a crooked into a straight canal, is done by extension of the head upon the neck—not of the neck upon the chest—that is, extension of the head at the atlanto-occipital articula-

tion, combined with slight flexion of the neck upon the chest and simultaneously lifting forward the root of the tongue and the hyoid bone with all muscles connected with it. Overcoming the first difficulty, namely muscular spasm, greatly facilitates the second, that is, converting a crooked into a straight canal by lifting forward the root of the tongue and hyoid bone. The position of the head, its extension upon the neck, and the flexion of the neck upon the chest are duties of the second assistant. This is the position for beginning the passage of tubes into the air tract or esophagus. But as the tube goes deeper into the esophagus, the head and neck must be lowered, it being a fundamental rule that in passing any tube, or probe, or sound through any of the natural passages of the body the instrument must have the direction of that section of the passage through which the distal end of the instrument is passing. It is, therefore, only when exploring deeper regions of the bronchi or esophagus that the head reaches anything like the Rose position.

Of the two methods of exposing the larynx to direct inspection, namely, the laryngoscope and suspension laryngoscopy, each has its advantages. For briefly exposing to view the interior of the larynx, for intra-laryngeal technic that can be done with one hand, and for simply passing a bronchoscope, the laryngoscope seems preferable. But where the exposure of the laryngeal interior should be longer, and especially in intralaryngeal operations requiring bimanual technic, suspension laryngoscopy has real advantages. The former in general requires less anesthesia and for that reason may seem preferable; but in the latter, or suspension laryngoscopy, the anesthetic is safer, as the air passages can with more certainty be kept open. While the fields of these two methods may, and do overlap, yet they should not be considered as rivals, but as supplementing each other.

General Purposes of Tube Work

In my limited practice tube work has been mainly devoted to two uses, namely:

(a) To the removal of foreign bodies from the air tract and esophagus.

(b) To the diagnosis and treatment of strictures of the esophagus, more often in

children and usually due to swallowing concentrated lye.

Of foreign bodies anything may be found that is not too large to pass into the air tract or esophagus. These are more commonly met with in children, and are likely to include parts of toys, or small objects picked up about the floor. The foreign bodies I have personally met with include such objects as beans, coffee grains, buttons, coins, grains of corn, collar buttons, orange pulp, pieces of corn stalk, nails, tacks, watermelon seed, portion of oyster, peanuts, pins, both straight pins and open safety pins, one tooth root, gold band intended to be placed around a tooth, bolus of meat, and small portions of toys.

Symptoms and Diagnosis of Foreign Bodies

The history of foreign body cases is often diagnostic. When they enter the air tract we get a history of embarrassed breathing, with coughing, wheezing, asthmatic symptoms, choking and sometimes vomiting. These symptoms follow immediately the entrance of the foreign body into the air tract. They may persist, as when the body is loose in the trachea. However, if the foreign body becomes fixed the respiratory symptoms may abate and even entirely disappear, as in the case of a straight pin I removed from the trachea, where it was fixed by being stuck into the tracheal wall. Where the right or left bronchus is tightly plugged, there will be no breathing in the corresponding lung. This was illustrated in one of my cases, where the left main bronchus was plugged. Complete obstruction to a main lobe bronchus will, of course, cut off breathing by the involved lobe. Bronchi which are obstructed will, with time, fill with pus. This is not a lung abscess in the true sense, in that lung tissue need not be destroyed, nor an adventitious cavity formed, but it is a filling up of the obstructed bronchus and its branches with pus.

Such cases, having a purulent expectoration, may be mistaken for pulmonary abscess or tuberculosis. From pulmonary tuberculosis they may be differentiated by the history of a foreign body entering the air tract in the absence of tubercle bacilli from the

sputum, the x-ray findings, the fact of only one lung being involved, and the further fact that the lobe involved is seldom the upper, but the middle, or more likely the lower lobe. The apex of the lung is seldom involved, as gravity favors the passage of the foreign body to the lower bronchi. I recently heard Dr. Jackson say that he had never seen a case of tuberculosis develop from, or in connection with, a foreign body in the lung.

These retained foreign bodies which give rise to the accumulation of pus in the bronchi, may, and do cause general sepsis, characterized by a septic chart, loss of weight and arthritis, with clubbing of the fingers and toes. Such cases should not be called lung abscess nor tuberculosis, but septic chest cases. In such cases, if the foreign body is properly removed, the prognosis is good.

Except in emergencies, all foreign body cases should be x-rayed, regardless of the opaqueness of the body to the x-ray. For, even though the body itself may be transparent to the ray, yet if it has been retained a sufficient length of time, it may have produced secondary changes which will show in the Roentgenograms, and in that way assist in locating the foreign body. Likewise, all such cases should be examined by a competent internist, as experience proves the value of their suggestions and advice.

The length of time a foreign body may remain in a lung varies from a few hours to many years. In a report of twenty foreign body cases which I had the honor to make to this Society two years ago, the average time the foreign body has been retained was ten and one-half days. One foreign body has been retained three months. Recently I saw a patient where a collar button had been retained in the right lung for twenty-one years. Jackson reports cases where the foreign body was retained for more than thirty years.

In my experience foreign bodies are found with almost equal frequency in the air tract and in the esophagus. In those cases in which the foreign body enters the esophagus and lodges there, there is usually an absence of respiratory symptoms, but more or less

difficulty in swallowing, depending on the degree of obstruction.

When the obstruction is only partial, liquids may be swallowed, but no solids. If the obstruction is total, of course, neither solids nor liquids can be swallowed. In one case difficult deglutition, will give a fairly correct idea as to whether the foreign body is in the air tract or in the esophagus.

In the esophagus foreign bodies are most often found at the upper end, at the Cricoid constriction, which is the narrowest portion of the esophagus. Here will often be found coins, buttons, pins, both straight and safety pins, fragments of bone, etc. Most of such objects are opaque to the x-ray and can be located both by Roentgenograms and by the fluoroscope. Flat objects, like coins or buttons, will usually be found with their flat surfaces looking forward and backward. Such bodies can be removed with the aid of the esophagoscope, or better still, the esophageal speculum, using alligator forceps. In passing the tube in such cases the neck should be flexed upon the chest and the posterior lip of the esophageal opening pressed back by the alligator forceps lest the tube go in front of, and completely override the foreign body. Let me say here that the day is past, if ever it existed, for attempting the removal of foreign bodies from the esophagus by the umbrella-probang, or worse still, by blindly passing forceps into an esophagus, grasping whatever comes within their bite and pulling it out.

Foreign bodies have a strange and, at times, a freakish way of changing their location in the human anatomy, or of escaping from it altogether. In passing tubes for the removal of such foreign bodies it is not sufficient to know they were there yesterday, or last week. They must, by all available evidence, be shown to be there the day and hour the tube work is to be done.

In conclusion, I commend to you all the sage maxim of Chevalier Jackson that, "A foreign body, in the human body, if left alone will do less harm than ill-advised attempts at its removal."

DISCUSSION.

DR. W. L. SIMPSON, Memphis: Dr. Wood has given us a very interesting and instructive paper on this subject which should receive a very free discussion.

Just a point or two of when to operate on these cases. Jackson never allows himself to be hurried. This is a mighty good rule in attacking foreign bodies, more than in any other operation I know about.

These cases are brought in and the physician says, "Doctor, I have got a foreign body in this kid's throat; please come to the hospital and take it out." That is the worst thing we can do. I have had doctors call me to the hospital and say, "I have a foreign body in a child's throat; please come right now, as the child has had it in there for three hours and I do not know what may happen."

Jackson, when he gets a message of that kind, goes off and thinks about it for three or four hours and says, "Yes, I will be out there in a little while," but he will not attempt any operation until he has thought out in detail exactly the best way to get the foreign body out. Those who have done foreign body work know that these cases should be given time. The doctor should be given time to think out exactly the best method of attempting the removal of the foreign body. Certainly, to go into a child's right or left bronchus hurriedly and not know every detail one can find out is a mistake.

With reference to the anesthetic, I think there are very few men who can operate like Jackson or even anywhere near like he can. Personally, I practically always use a general anesthetic. The patient is quiet, and I think much more harm is done by the ordinary operator in having the patient move about and by possibly not having the same assistants each time. You may have one assistant that you have all the time, but in doing good bronchoscopic work you have to have three assistants. You have to have one or two people who can hold that patient. Jackson has the same person to hold the patient during each operation or some one who has helped in several previous operations. He also has a first assistant who helps him to do the work. That is something we seldom get in any of our hospitals here. For that reason I do not like to use a local anesthetic in

little children where Jackson always uses it. I have never seen bad effects from giving ether to children with foreign bodies. I have had some bad results, but I have never been able to see that the anesthetic had anything to do with the results.

As to upper and lower bronchoscopy, I think Dr. Wood agrees with me thoroughly that there is very little use for lower bronchoscopy. We gain nothing by making an opening through the trachea and going in there through the mouth. The distance is just as short through the mouth as through the tracheal wound. As Jackson says, distance does not amount to much; it is the size of the tube you are working through. If you have a small child six months old, you gain nothing by going through the neck; you can use a small tube. With a large tube it is hard. Suction has been the one thing that has helped more than any other thing in doing foreign body work. I hardly see how we can get along without a suction apparatus. These foreign bodies are usually covered with mucus; the esophagus is filled with mucus. The child may have had the foreign body in a bronchus for a week or three days, and there is a great deal of secretion, and to try to sponge that out with cotton applicators is an impossibility. Suction gives something of the feel you would have had the first day you got in.

There is one little point I had hoped Dr. Wood would have brought out, and that is about forceps. You must study your position of your foreign body, locate it, and do not try to get the forceps in the wrong way, cross-wise or any other way. If it is a foreign body like a nickel or penny, do not grasp it this way, but study exactly where it is in the lumen and do not go down with forceps of any kind until you know exactly where it is, and grasp it, and then it comes out easily.

A word with reference to the introduction of the bronchoscope. I have practically never introduced a bronchoscope without the use of the suspension apparatus. It makes it easier than the spatula of Jackson. You can suspend the case and put your scope down into the bronchus, down in the trachea, and into the bronchus without injury at all, and it has been a great help to me. That and suction are the two things that have been of more value to me than all the other things put together.

THE INCIDENCE OF TABES DORSALIS.*

CARROLL C. TURNER, B.S., M.D., MEMPHIS.

TABES is commonly thought of as a disease of gradual onset, very chronic in its course, rare in the black race and in females. Like other diseases, it may be very atypical in its onset and course and paradoxical in its clinical findings. I do not think that tabes is as rare in the black race as is stressed by certain authors, most of whom have derived their statistics from the case records of their own private practice in northern cities and also from the ward cases of large hospitals in these cities, where a black patient is the exception to the rule of white cases in the hospital.

As to the chronicity of the disease, such a thing as acute tabes is known. I have had the opportunity to observe and follow such a case which is included in the following report and the case record which will be referred to afterward.

As to the etiological factor, all records show the preponderance of syphilis, as shown by the Wassermann reaction in the spinal fluids. However, many diagnosticians examine the blood only in suspected cases of tabes, relying on the blood Wassermann reaction. Many cases who show a negative blood Wassermann show a strongly positive spinal fluid Wassermann and globulin reaction. Therefore, a physical examination in tabes is never complete without a lumbar puncture and Wassermann on the cerebrospinal fluid.

It has been reported that chronic ergotism will cause pathological changes in the cord similar to tabes. One of the cases reported in this series resembled pellagra in many of its clinical findings and presented many typical signs of tabes. The Wassermann reaction and spinal fluid examination proved the diagnosis of tabes.

One swallow does not make a summer, but the following group of cases is submitted which accord with the majority of the so-called cardinal signs of tabes, but which do not accord with the usual racial incidence or sex incidence as reported by most authors.

It should not be omitted that the majority of these cases are taken from the records of the Memphis General Hospital and of the Out Patient Department of this hospital in which about sixty-two per cent of all cases belong to the black race.

In 33 cases of Tabes Dorsalis:

- | | |
|----------|-----------|
| 17—White | 27—Males |
| 16—Black | 6—Females |
- 3 Acquired the disease between 20-30 years.
 - 4 Acquired the disease between 30-40 years.
 - 8 Acquired the disease between 40-50 years.
 - 12 Acquired the disease between 50-60 years.
 - 5 Acquired the disease between 60-70 years.
 - 1 Acquired the disease between 70-80 years.
 - 19 Gave history of luetic infection.
 - 7 Were doubtful. 4 of these had positive blood Wassermann.
 - 7 Denied syphilis. 3 of these had positive blood or spinal fluid Wassermann.
 - 1 Was negative.
 - In 3 cases Wassermann was not done.
 - 28 Had lightning pains in the extremities or generalized in character..
 - 3 Felt numbness in feet and legs.
 - 9 Suffered formication over different areas.
 - 18 Gave the girdle sensation.
 - 28 Presented visceral crises.
 - 1 Presented laryngeal crises.
 - 15 Were incontinent of urine.
 - 3 Had retention of urine.
 - 6 Presented rectal incontinence.
 - 9 Suffered severe constipation.
 - 9 Suffered loss of sexual desire before 50 years.
 - 27 Were ataxic.
 - 16 Showed incoordination in both extremities.

*Read by title at Annual Session of Tennessee State Medical Association, Memphis, April 13, 1922.

- 27 Presented Argyle-Robertson pupil.
- 2 Presented third nerve paralysis—divergent strabismus.
- 2 Presented sixth nerve paralysis—convergent strabismus.
- 27 Presented positive Romberg's sign.
- 28 Presented positive Westphal's sign (loose knee-jerks).
- 2 Presented hyperactive knee-jerks—probably beginning tabes.
- 6 Had absent biceps reflex.
- 3 Presented loss of temperature sense.
- 6 Had loss of pain sense.
- 5 Had loss of tactile sense.
- 3 Had charcot joints.
- 2 Presented aortic regurgitation.
- 1 Had aortic regurgitation plus mitral regurgitation.
- 12 Presented generalized syphilitic adenopathies.
- 2 Presented syphilis of the lungs.
- 13 Presented positive blood Wassermann.

In 15 negative blood Wassermans, 8 presented 4 plus spinal fluids and 2 presented plus-minus spinal fluids.

Of all 33:

- 13 Presented positive Wassermann cerebro-spinal fluid.
- 2 Presented plus-minus Wassermann.
- 7 Wassermann was not done on cerebro-spinal fluid.

In all the cases in which lumbar puncture was done, the cerebro-spinal fluid came out colorless.

It was under pressure in 7.

The lowest cell count was 5 with plus-minus Wassermann.

The highest cell count was 940 with 4 plus Wassermann.

10 Showed 1 plus to 3 plus globulin.

Colloidal gold curve was done in only 3 cases. It showed tabetic type in 2. In one of these blood and spinal fluid Wassermann were negative.

The earliest date of onset of symptoms from the time of the initial lesion was three years.

The latest date of onset from the time of initial lesion was thirty-four years.

REPORT ON 2 CASES

First case—Joe Davis, age 49 years, male—black.

Came to Out Patient Department March 15, 1922.

Complaining of numbness from the knees down and weakness in the legs. He also said that he could not control his bladder, and that urine ran out in large quantities at times.

Onset very sudden. In February 1922, he went to bed feeling very well and had had no premonitory symptoms whatever. Early the next morning he awoke with a feeling of numbness and tingling in his feet and legs. Says he could not feel the cover on his legs. When he attempted to get out of bed he found he could not move his legs at all. That day he voided urine twice in the bed without any forewarning. The paraplegia gradually improved and in two weeks he was up again, walking very slowly and unsteadily with canes.

He walked into the clinic room with the aid of two canes. He has the typical step-page gate and is very ataxic, keeping his head bent forward and his eyes continually on the ground.

He is absolutely incoordinant in his lower extremities and muscle sense is lost from the waist down.

Romberg's sign positive.

Westphal's sign positive.

Achilles reflexes lost.

Biceps reflexes sluggish.

Argyle-Robertson pupil positive.

Tactile sensation diminished from knees down.

Temperature and pain sense normal.

Heart enlarged to the left and downward, A sharp aortic second murmur along left sternal margin. First sound at mitral area is almost obliterated by a prolonged murmur, occupying all of systole.

No arrhythmia.

Pulse strong and collapsible—Corrigan type.

Urine—Showed trace of albumin and a few pus cells.

Blood—Wassermann—Negative.

Spinal Fluid—4 plus, cell count 130, globulin one plus.

Colloidal Gold Curve—5555554321.

Diagnosis—Acute tabes dorsalis.

Second case—J. D.—black—man—came into hospital complaining pains of lightning, shooting character in both legs. At times the acuteness of the pains subsided to a dull boring ache which radiated down the back of both legs from the lumbar region. At times his feet felt numb and cold. He also had sensation of "ants crawling over his legs" which symptom was worse at night. He also complained of incontinence of urine and dribbled almost continually. He suffered great constipation and got bowels to move with great difficulty only by use of the strongest purgatives.

Onset of symptoms about one year before, and during this time he has lost no weight. Has suffered no diarrhea. He sleeps well except for the pains and as far as could be ascertained had suffered no bad dreams or depression of urine.

Past History—Has used alcohol and tobacco.

Veneral diseases denied.

Has children somewhere but does not know anything about them.

Physical Examination—An old negro man fairly well developed and nourished. No

signs of atrophies or rigidities.

Walks with ataxic steppage gate. Is incoordinant in upper extremities and does finger-nose and finger-finger test poorly.

Pupils—Equal and react to light.

Third nerve, no paralyses.

Romberg's sign—not positive, but patient sways with eyes closed.

Knee jerks—markedly exaggerated.

Achilles reflex—absent.

Babinski, Chaddock and Gordon—Oppenheim absent.

Biceps and triceps reflexes absent.

Superficial sensibility lost.

Muscle sense is lost below knees.

Tactile discrimination on arms and lower legs absent.

Physical examination—otherwise normal.

Laboratory—Blood Wassermann 4 plus.

Otherwise negative.

The patient developed a rash on the backs of both hands after admission to the hospital, which was diagnosed as pellagra. This cleared up in a few days. It is worthy of note here, however, to state that the same cord changes are said to be found in pellagra and tabes.

Diagnosis—Tabes dorsalis in its early stages.

DENDRITIC KERATITIS.

JAMES B. STANFORD, M.D., F.A.C.S., MEMPHIS.

THE usual number of dendriform ulcers of the cornea having appeared this fall, I was prompted to write a paper on the subject.

Dendritic keratitis is a superficial type of keratitis which may begin in the center or the periphery of the cornea, but is more likely to be seen in the periphery first. The early symptoms are pain, photophobia, lachrymation and sometimes a marked swelling of the upper lid. The pain is sometimes quite

severe and apparently out of proportion to the pathology found. In the early stages of the disease one sees a very narrow line of infiltration which may be a little elevated, but the epithelium covering this line of infiltration soon breaks down, thus forming a shallow groove. This groove arrangement explains the use of the term furrow keratitis, sometimes applied to the disease. In some cases no corneal changes may be seen for some days without the use of a very high powered loupe.

Recently I saw a case in a child five years old in which the upper lid had been swollen markedly for two weeks, during which time she had suffered from photophobia and lachrymation. I was unable to find any corneal lesion, though I was certain that I was dealing with a keratitis of some description. It was three days after the first visit that I found the groove of dendritic keratitis. The corneal lesion, however, is not confined to the grooves or furrows described above, but at points in the furrows and at its ends the surrounding tissue is affected causing punctate enlargements in the groove. The furrows often branch in different directions, which gives rise to the name keratitis arborescens which is frequently applied to the disease.

A specific cause for dendritic keratitis has not been found, and it is doubtful if there is a specific micro-organism connected with the condition. The disease is known to occur in or following cases of febrile disease such as pneumonia, influenza and malaria, especially malaria. Some observers believe it may be caused by focal infection. I believe all the cases I have seen, with two exceptions, have been caused by malaria. One of these exceptions began to improve immediately after the extraction of some abscessed teeth; the other case is one which is now under observation, and for which no cause has been found. A number of my cases did not show the malarial plasmodia, but the diagnosis was made by therapeutic test. I am so firmly convinced that malaria is the chief cause of nearly all cases of dendritic keratitis in this climate that I give the patient quinine in the absence

of any malarial symptoms. This line of treatment has not yet disappointed me. Kipp and Ellett have both pointed out the fact that malaria is often the cause of dendritic keratitis.

I agree with Charles of St. Louis, and other observers that the disease is a terminal nerve lesion. The reasons for this belief as given by Dr. Charles are "because of accompanying corneal anesthesia, the shape of the lesion, especially at the beginning, the advancement of the ulcer by new infiltration as if along the branching of a nerve, and also the extreme chronicity of the disease and the fact that it is seen only during or after those diseases which, when they affect the nervous system, affect the terminal nerves rather than the central nervous system.

Text books inform us that the disease is very rare under the age of sixteen, and that adults of middle age are most apt to be attacked. Until about one month ago I had never seen a case except in adults, but on the eighth of September I saw a white girl five years old suffering with dendritic keratitis, and ten days later I saw a white boy of seven with the same condition. Both of these children had malaria.

It has been my observation that the disease is likely to recur in the same eye.

The treatment of dendritic keratitis does not differ greatly from the treatment of other types of corneal ulcers. The usual treatment is rest, treatment of the cause, atropine, hot applications, boric acid irrigation, silver salts, mercurochrome and cautery.

THE TREATMENT OF AURICULAR FIBRILLATION.*

NEUTON S. STERN, M.D., THE DIVISION OF MEDICINE, COLLEGE OF MEDICINE OF THE UNIVERSITY OF TENNESSEE, MEMPHIS.

From the Cardiac Clinic, Out-Patient Department, Memphis General Hospital.

SIR THOMAS LEWIS, in his masterly work, "The Mechanism and Graphic Registration of the Heart Beat," Hoeber 1921, page 293, thus describes auricular fibrillation: "The walls of the chamber (the auricle) stand in diastole; systole is not accomplished; the wall as a whole remains stationary but for the movement conveyed to it when the ventricle contracts. Yet close attention to the muscle surface at once reveals feverish activity; the whole surface is alive with twitchings, or coarser undulatory movements, which in small adjacent areas appear to be independent of each other; the little movement, that is to say, the local twitch or local undulation, seems not to be propagated to any considerable distance but to come into conflict with similar muscular movements in its neighborhood. . . . This is the full condition which is properly termed fibrillation."

Recent work of Lewis, done since this was written, has gone far to decipher the puzzle of what is going on in the fibrillating auricle. He has shown that fibrillation is closely related to flutter, and that both are most probably due to what he calls "circus movement." That is, impulses travel around and around in the same pathway, the head of the activity pursuing the tail, with a gap between. This work shows that there is a certain irregular and very rapid rhythmicity in the auricular activity of a rate averaging 450 per minute.

Clinically, the condition of auricular fibrillation is diagnosed by the absolute irregularity of the pulse in both force and rhythm. Rapid and complete irregularity is almost sure to be fibrillation especially if the apical rate is 120 or over. Along with the absolute

irregularity of the heart action, there are several things which help to establish a diagnosis. If the rate is increased by exercise or fever, the irregularity becomes more marked, while in most other irregularities the pulse steadies with exercise or fever. A pulse deficit is a frequent accompaniment of auricular fibrillation, especially with the more rapid rates. When the pulse is slow and there is no deficit, it is often very difficult to distinguish fibrillation from other irregularities unless recourse is had to the graphic methods. The polygraph will allow a correct diagnosis to be made in two ways, first by the measurable irregularity of the pulse tracing, second by the absence of the normal auricular wave in the jugular tracing. The electrocardiograph establishes the diagnosis on similar bases, i. e., the irregularity of the normal ventricular complexes, and the absence of the normal auricular complexes, with or without sign of the circus activity in the auricle.

The consequences of auricular fibrillation depend chiefly upon the irregularity in rate and force of the ventricular action. The ventricles are not so well filled in the absence of auricular systole. If the ventricular rate is slow with the irregularity, many patients may go along very comfortably. But fibrillation does not tend to remain slow. It must be kept so by treatment and limitation of exertion. If not controlled the irregular ventricular action becomes faster. The fast rate has two serious consequences. The first is that the rest periods of the heart, the diastoles, are diminished, the muscle has less opportunity for recuperation and nourishment between beats. The second is that with the rapid rate, many ventricular contractions are so weak that they fail to open the semilunar valves, i. e., they fail to put out any blood into the arteries and so the contraction is absolutely wasted. These two conditions of

*Read before the Memphis and Shelby County Medical Society, January 16, 1923.

diminished rest with increased number of contractions, and of ineffective contractions (manifested by the pulse deficit) serve to exhaust the heart and as a result symptoms of heart failure supervene.

The treatment of auricular fibrillation is of two kinds. It may be directed toward the disturbed mechanism, or it may be directed toward the result of the disturbed mechanism. The newer of these is the treatment that has for its aim the restoration of the normal function. The agent employed is quinidine sulphate an isomer of quinine. First used by von Frey in 1918, the remedy has now been widely studied on the continent, in England and in America, and much is being written on its use today. Certain risks are attached to the use of the drug at present, and it should be employed, at least for a while yet, only under carefully controlled conditions. The best results are obtained in cases of paroxysmal fibrillation. Here there is a tendency to spontaneous recovery, but also a tendency to recurrence and permanency of the irregularity. In the hands of all workers quinidine is very effective in restoring this rhythm to normal and keeping it so. Recurrences become few and far between and may cease entirely. Daily doses of 0.2 gram seem sufficient to maintain the normal rhythm.

Permanent fibrillation in the early stages responds fairly well to treatment. The longer the fibrillation has been established the more difficult apparently is the restoration of normal action, and the more likely to relapse if restored.

Best results seem to be obtained after the relief of the symptoms of myocardial insufficiency. When this has been accomplished quinidine therapy may be started. Generally a test dose of 0.2 gm. is given one day. If no reaction follows the full dosage is started the next day. This dosage is generally given as 0.2 gm. every 2 hours for 5 doses daily. The fibrillation may disappear in a few hours or after five days. Generally the effect comes within the first 48 hours and if it does not it is not likely to be permanent. When the rhythm becomes normal the drug is omitted.

The treatment which is directed toward the consequences of auricular fibrillation, i. e.,

myocardial insufficiency, includes those measures which are well known. Rest is the most important of these, and morphine is a valuable drug to assist in securing complete rest, especially early when there is pain, excitement, fear, restlessness. Diuretics are indicated in the presence of edema, but only should be used as adjuvants to digitalis to heighten the effect of that drug in the removal of fluid. The most valuable are theocin and diuretin. But the most important drug therapy is accomplished by digitalis.*

Digitalis is nothing short of brilliant in its effect on myocardial insufficiency due to auricular fibrillation. It acts in two ways: it controls the rapid ventricular beating, and it stimulates and strengthens the myocardium. Heart block is a well known toxic effect of digitalis overdosage in the normally beating heart. In the fibrillating heart the same mechanism acts early, producing only good however under these circumstances. Conduction from the auricles to the ventricles through the bundle of His is interfered with, resulting in a definite decrease in the number of irregular auricular impulses which stimulate the ventricles. The heart slows down, diastole increases, and the heart has more rest; the nutrition of the muscle improves, filling is better; the pulse deficit disappears, useless work is no longer done. At the same time by its direct effect on the muscle, its beat is stronger and more effective. The circulation is thus markedly and rapidly improved, and the congestion, dyspnoea and tachycardia diminish.

Withering, who first wrote of digitalis in 1785, proposed sound principles for the dosage of the drug. "Let the medicine be continued until it either acts on the kidneys, the stomach, the pulse, or the bowels; let it be stopped upon the first appearance of any of these effects." Today it is said, give digitalis to the full therapeutic effect, then with-

*Eggleston: Some newer concepts in digitalis therapy.—*Am. Jour. Med. Sc.*, 1920, clx, 625. Rob-junson: Therapeutic use of digitalis.—*Medicine*, 1922, i, 1.

*Withering: An account of foxglove and some of its medical uses, with practical remarks on dropsy and other diseases. Birmingham, 1785.

hold the drug. As the full therapeutic effect is difficult to measure the drug is generally given until early signs of toxicity appear, such as headache, loss of appetite, nausea, vomiting or diarrhoea. One is then sure the full therapeutic effect has been obtained. When one of these symptoms is produced, the drug is omitted.

The most satisfactory and generally applicable method of dosage for securing satisfactory results promptly is that spoken of as the "large dose" method. 4cc of the standardized tincture (or its equivalent in leaves or other standardized preparation) is given every six hours for four doses, then 2cc every four hours for four doses daily until toxic symptoms supervene. Then it is withheld. The effects desired usually occur the second, third, or fourth day. Smaller doses take much too long to reach full effects, and often never do. The single dose, estimated by body weight is more risky and involves much more careful control.

After the drug has been stopped for from four to seven days small doses should be instituted again to keep up a concentration of digitalis in the system. Pardee finds that from 1-2cc a day of the standardized tincture will do this. The amount varies with different patients, depending upon the rate of excretion of the drug.

Summary.

Auricular fibrillation is a condition of the heart in which there is absolute irregularity of the ventricular action. It is often followed by tachycardia and myocardial insufficiency.

Quinidine sulphate in certain cases restores the normal mechanism of the heart, and thus tends to relieve the condition.

Digitalis slows the heart and improves its action so that the symptoms of myocardial insufficiency disappear.

Each of these drugs is valuable in its way. Neither can do the work of the other. Both should be used under proper conditions.

THE JOURNAL

OF THE

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Devoted to the Interests of the Medical Profession of Tennessee

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FEBRUARY, 1923

ANNUAL REPORTS OF SECRETARIES OF COUNTY MEDICAL SOCIETIES TO THE COUNCILLORS

The chairman of the Council, Dr. S. R. Miller, of Knoxville, is sending to the Councillors of the ten districts, the blank forms upon which the secretaries of the several county medical societies in each district will make out their annual report to their own Councillor. Promptness in dealing with this duty on the part of the county secretaries will greatly facilitate the final compilation at the hands of Dr. Miller and will insure a complete and valuable report.

THE COMING MEETING

The Ninetieth Annual Meeting of the Tennessee State Medical Association will be held in Nashville on April 10, 11 and 12th, of this year. It is hoped that this will be one of the very best meetings ever held by the State Association. The Committee on Scientific Program, appointed by the President, Dr. H. M. Tigert, is composed of the Secretary of the Association, Chairman, and Drs. Owsley Manior, W. C. Dixon, T. G. Pollard and J. G. Gallagher. The Committee is already at work and has outlined the general plan of the meeting. They have decided to devote the mornings of the first two days to clinics in the various hospitals of Nashville. These clinics will cover the entire field of medicine and surgery and the specialties.

The afternoons of the first two days and as much of the third day as is necessary to complete the program will be devoted to the reading and discussion of scientific papers. On the evening of the first day there will be the Presidential address and orations on a medical and surgical subject by specially invited guests of national reputation. On the evening of the second day the members will be

the guests of the Nashville Academy of Medicine at dinner.

It is obvious that with such a program the number of papers read will be somewhat curtailed. Every one wishing to read a paper before the Association should send in his name and the title of his paper to the Secretary at the earliest possible moment.

Make your plans now to spend April 10, 11 and 12th in Nashville.

A visit to the factory of Eisele & Company, manufacturers of clinical thermometers, hypodermic syringes and needles and other surgical specialties, located at 400 First Avenue North, Nashville, Tenn., will repay any physician for his time spent in going through this plant. The Company is glad to show any member of the profession, their process from the raw material to the final stringent tests in the standard tanks inspected by the United States Bureau of Standards.

It is interesting to know that this is the only factory manufacturing clinical thermometers west of New York. The Company now employs twenty-six workers and as all the instruments are mostly hand-made, it is a welcome industry to the State.

DEATHS

DR. NATHANIEL JOHN MINTER

IN MEMORIAM

Dr. Minter was born August 20, 1863, in Marion County, Va., the son of a physician; and died December 30, 1922, in Chattanooga, of pneumonia. His body rests in Forest Hills.

He was a graduate at the Tennessee Medical College, Knoxville, Tennessee, May 26, 1895, and registered for practice in Tennessee this same date. He then engaged in mine practice two years at Coal Creek, and two years at Middlesboro, Ky. Returning to Knoxville he practiced there three years, when he moved to Chattanooga twenty years ago, where he has been constantly in practice ever since. He was held in high esteem by hosts of friends. Honorable and upright in all his dealings, industrious; a good doctor, his absence will be missed and mourned by

those who know him. He was a man who read his Bible, was devoted to the church and died with a firm faith in the future.

In appreciation of Dr. Minter's life and character, of the esteem in which he was held by his medical colleagues the committee of the Chattanooga Academy of Medicine and Hamilton County Medical Society presents the following:

Whereas, Our esteemed colleague, Dr. Minter, has been called to the great beyond: be it

Resolved, That we desire to express our sorrow on the loss of the valued member of this Academy; that in his death the community has lost a good citizen and his patients a great friend, one whose life was worth while; the church a consistent member and worker; the poor a helping hand.

Resolved, That we render the sorrowing family our sincere condolence and trust that the mercy of our Heavenly Father will console them in this time of their great affliction.

Resolved, That copies of these resolutions be spread on a page set apart on the minutes, copies sent to the family of the deceased and a copy sent to the TENNESSEE STATE MEDICAL JOURNAL.

Committee:

B. S. WERT,
FRANK TRUSTER SMITH,
G. MANNING ELLIS,
G. RENNER.

DR. W. P. ATCHLEY

Dr. W. P. Atchley, of Knoxville, Tenn., a member of the Knox County Medical Society, died January 12, 1923, from Lobar Pneumonia following Influenza, age 57. He was a good doctor, a good citizen and a Christian gentleman.

J. C. HILL, M. D., *Secretary*.

DR. E. S. KING

The Sullivan, Carter and Johnson
County Medical Society

Bristol, Tenn., January 29, 1923.

The following committee from the Sullivan, Carter and Johnson County Medical Society appointed to draft suitable resolutions on the death of Dr. E. S. King of Bluff City, Tenn., report as follows:

Whereas, Dr. E. S. King of Bluff City,

Tenn., a revered and beloved member of our society was taken from our midst on December 10, 1922, and

Whereas, Dr. E. S. King has lived a life full of usefulness to his community, The Association of Southern Railway Surgeons, The Tennessee State Medical Association, and The Sullivan, Carter and Johnson County Medical Society for many years, and

Whereas, He was a friend respected and consulted freely by the people of his community, who held him in high esteem as a man tolerant of the opinion of others, but firm in the courage of his convictions,

Be it resolved, That we, the members of The Sullivan, Carter, and Johnson County Medical Society, do hereby extend to his bereaved wife and family the heartfelt sympathy of his host of friends in the medical fraternity of the counties of Sullivan, Carter, and Johnson.

(Signed:) DR. ARTHUR HOOKS,
DR. W. R. ROGERS,
DR. WILLIAM K. VANCE, JR.

Dr. E. S. King was born in 1865; graduated from Hospital College of Medicine, Louisville, Ky., 1890 and licensed to practice in Tennessee the same year; past-president Sullivan, Carter and Johnson County Medical Society; member Southern Association of Railway Surgeons; member Tennessee State Medical Association; died of cerebral hemorrhage December 10, 1922.

DR. J. F. STANBERRY

Dr. J. F. Stanberry of Newport, a member of the Cocke County Medical Society since 1917, died of cerebral hemorrhage on November 29, 1922.

DR. JOSE MARTIN SELDED

IN MEMORIAM

Chattanooga, Tenn., January 12, 1923.

Dr. José Martin Selden was born in Augusta, Georgia, on December 12, 1876, and died in Asheville, North Carolina, January 7, 1923.

Dr. Selden's family moved to Sewanee, Tennessee, in the early nineties where he was educated at the University of the South, graduating in the Academic department in 1899, from the Medical department in 1902. He was later connected with the University, Medical

Department, teaching in several of its departments, practicing medicine in Sewanee and the surrounding country.

Soon after the medical department of the University of the South disbanded he moved to Chattanooga, Tennessee, where he began the practice of medicine. This was in the spring of 1910. He joined the Chattanooga Academy of Medicine, and the Hamilton County Medical Society as soon as he came to this city. He became a very active and enthusiastic member. He made friends among all the members of the profession, gained their confidence and esteem, and acquired a substantial practice. He was a member of the Tennessee State Medical Association, the Southern Medical Association and the American Medical Association.

Dr. Selden was first associated with Dr. J. S. Dye, formerly of this city, doing a general practice. Later he took up the specialty of diseases of children and the major portion of his work was confined to Pediatrics until the winter of 1918 when he was compelled on account of the condition of his health, following an attack of influenza, to give up the practice of medicine.

Dr. Selden's work as chief of staff of Erlanger Hospital during the last three years that he was in Chattanooga resulted in the establishment of laboratories and other important improvements and finally in the recognition of the hospital by the American College of Surgeons. Dr. Selden was very public spirited. He gave a great deal of his time to charity and as chief of staff of Erlanger Hospital he was there looking after the best interests of the hospital and the patients at all times of the day and often late into the night. From the time that he was forced to give up the practice of medicine until his death, January 7, 1923, he made a brave and hard fight for his life. He was ever cheerful to the very last and his one thought and desire was to regain his health and again take up the practice of his chosen profession.

Your committee offers the following resolutions on the death of Dr. Jose Selden:

Whereas, The Almighty Creator has seen fit to take from us, "Joe Selden" in the prime of his life and usefulness, and *whereas* Dr.

Selden was a man of sterling qualities, industrious, capable, honorable, ethical with his fellow practitioners, untiring in his efforts to serve his patients, a friend to rich and poor alike, to sick men and women, to *little children*, a true friend, ever practicing conscientious scientific medicine, be it therefore

Resolved, That in the death of José Selden this Society has lost one of its most faithful and efficient members, the community a good physician, and the city and State a valued citizen.

Resolved, That we deplore the untimely death of our beloved fellow practitioner and that we express to his sorrowing wife, lovely daughter, and faithful mother our sincere condolence in the loss of a true son, loving father and dutiful husband.

Be it further resolved, That copies of these resolutions be spread on a page set apart on the Minutes of this Association, that copies of it be sent to the family of the deceased and that a copy be forwarded to the secretary of the Tennessee State Medical Journal for publication.

Committee:

EDWD. NEWELL,
L. T. STERN,
B. L. JACOBS,
J. MCCHESENEY HOGSHEAD,
J. B. HASKINS.

WHITE COUNTY MEDICAL SOCIETY

Memorial

Dr. Isaac L. Davis of Sparta, Tenn., was born April 3, 1847, in Nashville, Tenn. Graduated in Medicine at the University of Nashville and soon removed to White County where he practiced his chosen profession for fifty years, died January 13, 1923, and was buried at Sparta.

Dr. Davis was a very successful physician and did an extensive practice in White and adjoining counties. He had many friends and was a member of the Methodist Church and a Royal Arch Mason.

He worked hard and continued his practice to within a few days of his death, making long drives in an open buggy to see cases of

pneumonia which disease he contracted and yielded to its ravages within a few days.

He leaves a family of four children, several grandchildren and a wife to mourn his going.

Respectfully,

A. F. RICHARDS, M.D.

Secretary White County Medical Society.

COUNTY MEDICAL SOCIETIES

LANDERDALE COUNTY MEDICAL SOCIETY

(Reported by Dr. W. V. Sanford, Secretary)

For 1923, the following officers have been elected:

Dr. R. B. Wilson, of Gates, president; Dr. J. L. Dunavant, of Henning, first vice-president; Dr. W. C. Sanford, of Ripley, second vice-president; Dr. W. V. Sanford, of Ripley, secretary-treasurer.

PUTNAM COUNTY MEDICAL SOCIETY

(Reported by Dr. Lex Dyer, Secretary.)

At a recent meeting, election of officers for 1923, resulted as follows:

Dr. Z. L. Shipley, president; Dr. J. T. Moore, first vice-president; Dr. J. MacWheeler, second vice-president; Dr. Lex Dyer, secretary-treasurer.

HARDEMAN COUNTY MEDICAL SOCIETY

(Reported by Dr. E. R. Timmons, Secretary)

On January 8 a very enthusiastic meeting was held at Grand Junction.

BLOUNT COUNTY MEDICAL SOCIETY

(Reported by Dr. F. A. Zoller, Secretary.)

With the exception of two or three meetings, the Blount County Medical Society met every week in regular session during the past year. Every meeting was well represented in its attendance—the average being eleven plus out of a possible twenty-two, the number comprising the entire roll of membership.

The program committee prepared a list of subjects and assigned essayists six months in advance. This ample notification to the members prompted them to think about their subjects beforehand and thus, with but few exceptions an essay was presented for discussion at every meeting throughout the year.

In a public way the profession co-operated with the directors in the late "Cancer Campaign." Different members presented the subject before the various clubs, churches and institutions of learning, both white and colored.

During the year one member was removed from the society by death; one was dropped for non-payment of dues, and two were added by transfers from other societies.

The newly elected officers for 1923 are Dr. W. B. Lovingood, president; Dr. E. L. Ellis, vice-president; and Dr. F. A. Zoller, secretary-treasurer.

WEAKLEY COUNTY MEDICAL SOCIETY

(Reported by Dr. B. B. Parish, Secretary-Treasurer.)

At a regular meeting in Martin on December 20, 1922, the following officers were elected for 1923:

Dr. C. M. Sebastian, of Martin, president; Dr. J. M. Stewart, of Martin, vice-president; Dr. B. B. Parish, of Dresden, secretary-treasurer (re-elected); Dr. R. M. Little, of Martin, delegate to Tennessee State Medical Association; Dr. J. E. Taylor, alternate. A motion was unanimously carried to the effect that the Weakley County Medical Society endorsed the candidacy of Dr. J. B. Bond, of Martin, for the position of superintendent of the West Tennessee Asylum for the Insane, at Bolivar.

THE HENDERSON COUNTY MEDICAL SOCIETY

(Reported by Dr. J. E. Powers, Secretary.)

The Henderson County Medical Society met January 9, 1923, in the office of Dr. J. E. Powers, Dr. G. A. Brandon, vice-president, presiding. Dr. R. L. Wiley read an interesting paper on the treatment of pulmonary tuberculosis which was freely discussed. Doctors Parker and Waller reported interesting cases of chronic appendicitis and empyema. These were discussed freely.

Drs. Brandon, Waller, and Parker were appointed as a committee to confer with County Judge L. B. Johnson relative to the county health officer. Dr. J. E. Powers was requested to do all bacteriological examinations.

Papers for next meeting are: Dr. C. H.

Johnson, Influenza; Dr. S. T. Parker, Pneumonia. Other papers are to be read by Drs. E. E. Waller, W. F. Huntsman, and W. T. Watson.

The doctors present were: Johnson, England, Watson, Brandon, Parker, Waller, Wyllie, Arnold, and Powers

The Society adjourned to meet Feb. 12, 1923.

KNOX COUNTY MEDICAL SOCIETY

(Reported by Dr. Jesse C. Hill, Secretary.)

Meets regularly every week. Last week a lecture was delivered by Dr. Carrol Fox, government expert.

CHATTANOOGA ACADEMY OF MEDICINE AND HAMILTON COUNTY MEDICAL SOCIETY

(Reported by Dr. Marchbanks, Secretary 1922)

Two deaths, previously unrecorded, occurred in 1922, Dr. R. H. Tatum and Dr. N. J. Minter.

DICKSON COUNTY MEDICAL SOCIETY

(Reported by Dr. W. J. Sugg, Secretary.)

The following officers have been elected for 1923:

Dr. H. Weaver, president; Dr. J. J. Teas, vice-president; Dr. W. J. Sugg, secretary (re-elected).

MEDICAL NEWS AND NOTES

THE PHYSICIAN AND THE PEOPLE.*

RAY LYMAN WILBUR, M.D.,
PRESIDENT-ELECT, AMERICAN MEDICAL ASSOCIATION, SAN FRANCISCO.

I am deeply impressed with your interest, your enthusiasm, and your earnestness. I believe that you scarcely realize the importance of your position at the present time in this country. You have reported here the movements that are in progress which seem to influence, more or less, the development of the profession in certain directions.

*Extemporaneous remarks made before the Annual Conference of Secretaries of Constituent State Medical Associations, Chicago, Nov. 18, 1922. A. M. A. Bulletin, January, 1923.

Do you realize that we are arousing interest among the educated laity by increasing our educational standards and by furnishing good instruction along biologic lines in our public schools? Many laymen are appreciative of things medical, and they will be more and more interested as time goes on; it is inevitable. For that reason, you men have a responsibility in guiding the medical profession, in your various states, so that these laymen who are becoming interested may be further instructed.

A physician is a funny sort of fellow. When he enters the profession, he puts on what the people call a cloak of professional ethics. He looks on the public in a rather patronizing manner, and, while the people love him, they have no clear idea of what he is about to do in many of the things he undertakes. He is susceptible to attacks by the cults. Everything he does to fight them is looked upon as selfish. There are constant changes in medical practice. There is a myth that in China the Chinese physician keeps his patient well and gets payment during that period, but he gets nothing when the patient is sick. As medical men, we have to care for persons during illness, when they have no income unless it comes from bonds or stored-up capital. Economically, we are in a strange position. We have to live on the reserves built up by people or upon their future ability to build up reserves, because we care for them when they are not earning, economically. We are confronted by public and economic problems in a unique and unusual way. Educationally, we are able to link ourselves with the great changes that are coming with a clearer and better understanding of hygiene and a better appreciation of what hygiene and public health can do in any community.

There has been considerable discussion at this conference concerning health expositions and their success. They are the timekeepers of progress. The public has taken and is taking great interest in them.

I have been impressed by the fact that we have not put into practice many of the things that we have attempted to impress upon women. They are the best friends of the medical profession. They are the ones with whom

we work to a large extent; they have a profound influence upon children and upon the home. They are the physician's best friends and those whom it is most easy for him to guide. They ought to be brought into our organizations. We are sometimes inclined to look on women and to say that as wives they are angels, first, because they are always up in the air; second, because they are always harping about something, and third, because they never have anything to wear. There are many of us, I am afraid, who still hold this somewhat patronizing view of the gentler sex; but I tell you they are strong safeguards in the development of the profession of medicine. They need our help. They need practical education from us. If we direct them during the period when their babies are young, and encourage them to look to us for guidance, they will look to us all the way through. We must enlist their support now as they become active, voting citizens. They still look to us as guides in public affairs. If we can educate by the right kind of leadership, we need not fear about other things.

The practice of medicine has changed with the success of our various health measures. Skill in early diagnosis is the most important thing now in medicine, particularly when combined with the ability to guide people in the right direction after early diagnosis has been made. The old days of medical practice have passed. A new conception has arisen. The physician has to be the guide. He must be familiar with diet and many other things, or he will not succeed. Let us recognize and realize that bringing the laboratory and scientific medicine into the life of the physician has changed his practice. Let us remember that our increasing educational standards have changed the attitude of the community toward health problems; but let us remember also that the finest and most troublesome quality of the human animal is his credulity. We are all credulous. Often we believe some of the things that are advertised about remedies. As scientific men, we should be less credulous when somebody announces that he has found a panacea for everything.

The future of medicine in this country will depend on biologic training given in the

schools of our communities. Young boys and girls obtain a conception of life from biology. When they have dissected animals, or when they have seen how the earthworm digests its food, how it reproduces, a curiosity is aroused, which is satisfied only by fact. We are all of us interested in life. Everybody, I take it, likes to go to the circus and see wild animals. You can make the human body just as interesting as the circus is.

See the superintendent of public instruction in your city about putting hygiene in the schools; have him look to you for guidance as to what books should be used. In other words, the message I am bringing to you is this: You have leadership, and should exercise it somewhat more broadly than you have done. Our attention has been directed so far toward bringing the forces of the medical profession together. Let us, having brought these forces together, in a more or less satisfactory way, assume leadership in all directions in the communities in which we live. Let us extend our leadership and develop ourselves so that people may look to us for expert opinion and advice rather than to the prejudiced or to the quack or the charlatan.

ANNOUNCEMENT.

The Seventh Annual Clinical Session of the American Congress on Internal Medicine will be held in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at Philadelphia, Pa., beginning Monday, April 2, 1923.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address inquiries to the Secretary-General.

SYDNEY R. MILLER, *President*,
Baltimore, Md.

FRANK SMITHIES, *Secretary-General*,
1002 N. Dearborn St., Chicago, Ill.

MEDICAL NEWS AND NOTES

The following letter of Rear Admiral E. R. Stitt, Medical Corps, United States Navy,

was approved on August 17, 1922, by the Bureau of Medicine and Surgery, in charge of Rear Admiral W. C. Braisted, Washington, D. C., and published for the information of the medical officers of the United States Naval Service, in the *U. S. Naval Medical Bulletin*, October, 1922.

July 7, 1920.

To the Bureau of Medicine and Surgery:

"Subject: Recommendation that neoarsphenamine be substituted for arsphenamine in connection with use on board ships and at certain stations of the Navy.

"1. I would recommend that the use of arsphenamine be discontinued on board ships of the Navy and in its place to substitute neoarsphenamine. This same recommendation would apply to stations and smaller hospitals.

"2. In the larger hospitals where facilities for the administration of arsphenamine are satisfactory, the choice between arsphenamine and neoarsphenamine should be left to the discretion of the commanding officer.

"3. This recommendation is made for the following reasons:

(a) In discussing fully the matter with the director of the hygienic laboratory he is of the opinion that most of the accidents attending the use of arsphenamine have been connected with errors in technic. In view of the simplicity of technic when using neoarsphenamine, many untoward results would be eliminated.

(b) In the clinic of the Brady Institute, neoarsphenamine is used exclusively, and Doctor Young and his associates are unable to note any lessened therapeutic efficiency with this drug than when arsphenamine is used."

WHY IS A COUNTY MEDICAL SOCIETY?

You certainly can spare two nights a month for improving your mind. Come to the meetings. Perhaps you can tell the others something that will help them. Help make these meetings lively, do your share. If you won't read a paper or report a case, get up and discuss the papers and cases that are presented.

If you can't improve your mind or won't

share your knowledge with your neighbor, come to the meeting anyway. The seats are comfortable and no one will disturb your sleep.—*Denver Medical Bulletin*.

THE JUDICIAL COUNCIL OF THE A. M. A.

At a meeting of the Judicial Council, held in Chicago in November, a large amount of business was attended to, matters having been referred to the Council from a number of state associations, county societies and from individual physicians. Some of these involved questions that had already been acted upon by the councils of the state associations, while others came direct to the Judicial Council from officers of societies or from individual members.

The constitutions and by-laws of component county medical societies and of constituent state medical associations provide for boards of censors for the county societies and for boards of councilors for the state associations, whose duties are those concerned with mediation and with adjudication of questions arising between individual members, or between members of a society and the organization, or between two or more societies. The jurisdiction of the board of censors of the county society is coincident with the limits of the county in which the society exists, while the jurisdiction of the council of the state association extends to all of its component county societies.

Proper provision is made in the organic law of all societies for appeal from the decision of the judicial boards. Appeal may be made from the decision of a board of censors of the county society to the board of councilors of the state association, while an appeal from the decision of a board of councilors may be made to the Judicial Council of the American Medical Association. This method of procedure should be followed in all cases. The board of censors of the component county medical society in which a question for settlement arises should consider the question first. After that, the board of councilors of the state association should be called into conference, and finally, if necessary, appeal

may be made to the Judicial Council of the American Medical Association. The policy of the American Medical Association and its various councils is not only to refrain from interfering with the operations of the established agencies of the component county and constituent state medical organizations, but also to urge that those agencies shall operate to the fullest possible extent for the benefit of their respective organizations. Whenever the national Association or its officers can render assistance, such assistance will be given freely and gladly.

The Judicial Council is now engaged in a study of the Principles of Medical Ethics of the American Medical Association, with a view to revision. This duty was imposed upon the Council by the House of Delegates at the St. Louis Annual Session last year, through its appointment by the President as a special Committee on Revision of the Principles of Medical Ethics.—*A. M. A. Bulletin*.

MISCELLANEOUS

COLOR IN HOSPITALS

FROM "NOTES AND ABSTRACTS"

With the advent of asepsis, hospital interiors, especially the operating rooms, were painted a glaring white under the idea that this was suggestive in a measure of antiseptic cleanliness. Latterly, the investigations in regard to the physiological effect of color has caused a change in the practice. In many of the newer hospitals the waiting rooms for the convenience of visitors are decorated in warm, cheerful sunshine colors to create a favorable first impression of the hospital.

It has been found that in rooms that are well lighted cool colors can be used on the wall such as French gray, olive green, or blue; rooms that lack the necessary light or warmth are done in a buff or warm green treatment. Where gray is used in rooms of this kind, yellow must be added to give warmth.

In the operating room, while an abundance of light is required, it has been found that when the light strikes a flat finish the rays are diffused in a uniform way so that an even and restful effect is produced, but when the

light strikes a gloss paint or a glazed tile glaring high-lights follow. Many surgeons and nurses have found that their eyesight has been harmfully impaired by the glaring finish of the operating room. French gray is now largely used in such places; olive green has also been found a satisfactory color.

For the wards a warm green or tan is pleasing and restful. People are realizing more and more the value of color in the hospital and how much can be accomplished by the proper use of color. If an invalid's thoughts can be directed in other more cheerful channels it will help him more quickly along the road of recovery.

CARDIAC COMPLICATIONS OF GONORRHEA

The old concept of gonorrhea as a local process has long since been abandoned. Gonorrhea is an infection, local at first, which spreads not only by direct extension, but also and not infrequently through the blood stream—a general septicaemia associated with a variety of metastases, notably arthritis, synovitis, myositis and not infrequently endo-, myo-, or peri-carditis.

The cardiac complications of gonorrhea occurring in 33 years at the Johns Hopkins Hospital have been reviewed. Twelve hitherto unreported cases have been added to the series, and considered in connection with 60 cases collected from the literature. In 176 instances of acute endocarditis of determined origin 20, 11.3 per cent were gonococcal.

Gonococci were cultivated intra vitam (10) or post mortem in 14 instances; they were demonstrated bacterioscopically following negative cultures intra vitam or post mortem in 6 instances.

There were two additional cases in all probability gonorrheal, with negative cultures during life in which no bacteriological examination was made at necropsy, and several other instances of more or less characteristic endocarditis occurring in the course of acute gonorrhea with negative blood cultures but without necropsy; these latter cases were not considered in our tables.

But little evidence could be obtained as to the relation of the time of onset of the cardiac involvement to the appearance of the disease or other complications. Arthritis occurred in but 41.1 per cent of our cases, but in 68.5 per cent of 54 cases collected from other sources.

The cardiac complications of gonorrhea, as we have seen them, appear usually in the form of an acute or subacute vegetative and ulcerative endocarditis which comes on at varying periods in the course of the infection, often in the absence of other apparent complications. The onset may be sudden or more gradual, but is generally rather acute. There are usually chills and high remittent fever, rapidly developing anemia and considerable leucocytosis. The constitutional symptoms, those common to all grave general infections, are usually early and profound. There is often a petechial eruption. Embolic phenomena are common. There is albumin, casts, often blood in the urine, and in longer cases anasarca and hydrops give evidence of a grave nephritis. The duration is usually from 4-9 weeks, but longer subacute cases may occur.

The aortic valves are those most commonly involved, but as in all acute endocarditis, the right side appears to be affected more often than in the chronic, so-called rheumatic valvular disease. In our experience, involvement of the pulmonary orifice has been rather common. Gonococcus usually implicates healthy previously undiseased, valves. Mural endocarditis is frequent. The cardiac involvement is not restricted to the endocardium, endoaortitis, pericarditis and suppurative myocarditis are not unusual.

Gonorrheal endocarditis is in general a malignant process pursuing a progressive and fatal course. In its virulence it occupies a position between the slower and more subacute *S. viridans* and *B. influenzae* infections and the more virulent *Staph. albus*, *Staph. Aureus*, *Pneumococcus* or *S. haemolyticus* endocarditis.

Milder instances of gonorrheal endocarditis or pericarditis with recovery may occur. How frequent these are is not clear. It is our impression that they are relatively rare. Gonor-

rheal cardiac infections as a whole are by no means very unusual.—(W. S. Thayer, Johns Hopkins Hospital Bulletin, October, 1922. Abstracts U. S. P. H. S.)

THE COURSE OF MORTALITY FROM CANCER IN BALTIMORE

To obtain a good understanding of the survey made by William Travis Howard, Jr., Baltimore (*Journal A. M. A.*, Jan. 13, 1923), the original paper should be consulted. In closing, he says: If it were practicable to investigate the course of cancer mortality for each particular organ or part, even if no more thoroughly than it has here been possible to do for cancer of the breast and uterus, it would be found that cancer is not increasing in either incidence or in mortality among those actually exposed to risk. So far as Baltimore is concerned, the evidence at hand is insufficient to prove conclusively that there has been no actual increase in the mortality rates from cancer of all organs taken together, at least it renders this doubtful. It does show beyond all question of doubt that cancer mortality in Baltimore has not increased in any degree approaching that indicated by the crude rates. For cancer of the only two organs, the breast and the uterus, for which rates approaching specificity could be obtained, it has been shown that in the forty years ending in 1920, mortality has not increased, and that during the latter half of this period there has occurred a gradual but very significant decline in the death rate, which, in the absence of other satisfactory explanation, it seems safe to ascribe to medical activities.

CLINICAL THERMOMETERS AND SYR- INGES NOW MANUFACTURED IN TENNESSEE.

In this issue will be found the advertisement of Eisele & Company, manufacturers of clinical thermometers, medical, veterinary, and dental hypodermic syringes, and needles and other surgical specialties. The organization consists of former workmen of leading eastern factories. All the men have had many years experience in the manufacture of these

scientific products. This factory was opened June 1, 1922 at 400 First Avenue North, Nashville, Tennessee, and they are now ready to supply seasoned and thoroughly tested instruments. They believe that their new location will permit of economies in manufacture and enable them to give prompt service. Labor costs are ninety per cent of the total and as they progress it will mean a substantial industry for this section.

The raw material for the thermometers comes in triangular shaped tubing with a fine thread-like hole running through the entire length back of which is a back ground of enamel of various colors. This tubing is cut into the proper lengths by means of a fine flame and it then goes from man to man until each piece has undergone fifty-six operations before the finished product is ready to be tested by the standards required by the United State Bureau of Standards. All glass hypodermic syringes are treated much in the same manner, with the exception in the size of stock used. The needles are produced on an automatic screw machine which is adjustable to one thousandth of an inch, which insures proper fit to the syringes.

A cordial invitation is extended to the profession to witness the above process.

THE DOCTOR'S OFFICE.

Recently I had occasion to do a little investigation requiring calls on a number of physicians, several well known to the profession and others not so prominent. With few exceptions the offices visited were not attractive and in several instances quite the opposite. One office was so repellent that a description of it may prompt some other physician to walk around the block and approach his office as if he was a prospective patient and register each impression from the front door to his office door to see if some change in surroundings might not contribute to greater success.

The porch floor was unswept. The door bell had a card saying, "Bell out of order." The second knock brought to the door a slouchy negro girl with frowsy hair and soiled apron, who opened the door a few inches to see if it was a holdup man or a peddler. She admitted me to a dark hall through which I

passed to a dingy middle room adjoining the office. The furniture was antiquated and shabby. The walls had not been papered in many years and on them hung crayon portraits and other monstrosities of decades ago. The carpet was threadbare and a wobbly center table held magazines none less than a year old. No patients were waiting, and the uninviting surroundings answered for me the reason why.

I am tempted, with apologies to Walt Mason, to pen the following: If I was a doctor, before another sun rose, I'd tog myself out in a new suit of clothes and cover my waiting room with a rug so rare that my patients would rub their eyes and stare. I'd buy for my office the best that I could pick, if I hadn't the price I'd do it on tick. Then I'd have a nifty maid to swing the door open wide and invite them with a smile to see the doctor inside; and I'd charge an extra buck for each call, by jing, and soon I'd have a brand new car 'n everything.—*C. H. Graves, in Philadelphia Weekly Roster.*

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Junior Medical Officer and Assistant Medical Officer.—(Roentgenology; Psychiatry.)

Medical Officer.—(Tuberculosis; Neuropsychiatry; Internal Medicine and Diagnosis; Physiotherapy.)

Applications will be rated as received until the close of business on July 3.

The examinations are to fill positions in the Indian Service, the Coast and Geodetic Survey, the Public Health Service, and the Veterans' Bureau.

Competitors will not be required to report for examination at any place but will be rated on the subjects of education and training, weighted at 30 per cent, and experience, weighted at 70 per cent.

Definite specifications as to education and experience requirements, and salaries and allowances, are given in the printed announcement, which will be furnished upon request.

Full information and application blanks

may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or custom house in any city.

CAUSE OF INFLUENZA DISCOVERED AT ROCKEFELLER INSTITUTE, SAYS DR.

FLEXNER

Dr. Flexner's statement, as prepared at the request of Dr. Herman M. Biggs, State Commissioner of Health, follows:

"One of the notable characteristics of epidemic influenza is that a pandemic or world-wide outbreak of the disease such as that of 1918 is usually followed by milder secondary waves in the years immediately succeeding. These secondary waves tend to be milder as regards individual cases which are not followed by such numerous or severe complications as bronchitis and pneumonia.

"Recent reports received from abroad and from points in the United States indicate that such a secondary wave of epidemic influenza, relatively mild in character, is passing over parts of Europe and America. Attention should be directed to these warnings, in order that due precautions may be taken to limit as far as possible, the spread of this disease from person to person, and more particularly to avoid by means of proper medical and nursing measures the development of throat and lung infections, which are so apt to follow influenza.

"The 1918 to 1923 series of epidemic waves of influenza served to extend the medical knowledge of the disease in various ways and perhaps particularly in respect to the bacteriology of the original disease. The term "original" is used here to distinguish between the influenza as such and the common complicating bronchitis and pneumonia to which the grave nature of influenza is directly due. These complications are induced not by the germ causing influenza, but by other and more common germs often already present in the nose and throat, the attack from which is made possible by the preceding injury from influenza.

"Between the years 1889 and 1892, the date of the late previous world wide epidemic of

influenza, which was studied by the modern bacteriological methods introduced by Koch, and the pandemic of 1918 to 1923, the improvement of these methods had gone forward rapidly and far. Hence the bacteriological study of the epidemic waves occurring in 1918, 1919, 1920, 1921 and 1922 could be made with these newer and improved methods.

"It so happens that the newer principles for cultivating disease germs outside the bodies of man and animals—in their nature very difficult to grow in this manner, but necessary for purposes of study and research—were worked out ten years or more ago by Dr. Theobald Smith and Dr. Hideyo Noguchi of the Rockefeller Institute of Medical Research in New York City. It was by the use of these new methods, modified to meet the needs of the special conditions necessary in studying influenza, that additional knowledge of great importance was obtained by Dr. Peter K. Olitsky and Dr. Frederick T. Gates also of the Rockefeller Institute.

"Their investigation has resulted in the discovery of a previously unknown and very minute germ which is present in the nose and throat during the first thirty-six hours of an influenza infection, as the condition is technically known. And not only has this extremely small bacillus never been found in healthy persons or in those sick with other diseases, but when injected into the windpipes of rabbits, it produces effects similar to those seen in human beings in the several stages of influenza.

"These effects are of two general classes: first, as they affect the blood and alter the relative number of red and white blood cells through the destruction of one variety of the latter. This effect on the blood can be, and is used in making tests to decide whether a patient has or does not have influenza. The effect on the blood cells is temporary and not of itself of any serious importance.

"The second kind of effect from the germ causing influenza is far more significant and consists of mild injuries to the substance of the lungs, recognizable under the microscope. These injuries, while not in themselves serious, become so because they put the lung tissue

in such a condition that the bacteria of the nose and throat can readily attack it. These nose and throat bacteria are ordinarily without power to produce disease, but are now capable of producing the bronchitis and pneumonia already referred to.

"This new bacterium, found thus far only in cases of epidemic influenza in the early hours of the disease, is so small that it can pass through the pores of an earthenware filter, and when magnified 1000 times is just capable of being seen distinctly under the microscope. It has been given the name of *Bacterium pneumosintes* which translated into simple English signifies that this germ injures the lung tissues in such a way as to deprive it of the power, ordinarily possessed by it, of resisting the attacks of the common bacteria of the nose and throat. In health, these common bacteria are easily destroyed by the lung tissue, but as a result of the injuries induced by *Bacterium pneumosintes* they are now enabled to lodge and multiply in the lungs, thus producing bronchitis and pneumonia.

DOCTOR WANTED

Anderson, Tenn., Feb. 1, 1923.

We are in need of a doctor at our place. We can insure him a salary of at least \$1,200 a year and besides this he could make a lot more. This has been made up by monthly payment by some of the people here. Address A. G. Russell, Anderson, Tennessee.

BOOKS RECEIVED

TEXT-BOOK OF PEDIATRICS. Edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and edited by Julius Parker Sedgwich, B.S., M.D., Professor of Pediatrics, University of Minnesota, Medical School, and Carl Ahrendt Scherer, M.D., F.A.C.P., Duluth, Minnesota. 262 illustrations; 916 pages. First edition in English. J. B. Lippincott Company, Philadelphia and London.

This volume is the first English edition translated from the seventh German edition of a classical text on pediatrics edited by Professor E. Feer, a collaboration of ten famous continental pediatricians. In addition to the translation, the entire book has been reedited and a number of additions made by several American doctors. Most

of these are from the Middle West and Western section where pediatrics has been greatly influenced by the European teachings.

The chapter on the care and feeding of the normal infant by Professor Theimich, revised and edited by Dr. J. Hess, contains only eleven pages on artificial feeding. This seems to be rather brief handling of so important a subject in a volume of over nine hundred pages. Although the subject is carefully covered, it is so condensed that it is of most value to the physician familiar with infant feeding.

The use of alcohol in treating children is discouraged. Scurvy has been grouped with the diseases of the blood forming organs, the heating of milk is said to play no part in its etiology, and it is not a nutritional disorder. In the section on the diseases of the digestive system, the diarrhoeas or dyspepsias are classified as nutritional disorders with and without toxic symptoms; their classification according to etiology is advised against.

The chapters on acute infectious diseases, diseases of the nervous system, and diseases of the skin are full and are excellent from any point of view. The article on syphilis is also exceptional.

An attempt has been made to cover the entire field of pediatrics, but some of the newer problems have received little mention. This single volume contains a wealth of information; many of the rarer subjects not mentioned in the average book are to be found here. On account of its wide scope some subjects are of necessity brief; this is especially true of the treatment.

The book is well gotten up. The arrangement cannot be improved on, and the index is full. The illustrations are numerous and well chosen. It can be recommended to all that are interested in the diseases of children.

S. P. B.

PHYSICAL EXERCISES FOR INVALIDS AND CONVALESCENTS, By Edward H. Ochsner, B.S., M.D., F.A.C.S., President Illinois State Charities Commission; attending Surgeon, Augustana Hospital, Chicago. Second edition, with 56 pages and 42 figures. St. Louis. The C. V. Mosby Company, 1922. Price seventy-five cents.

This little book was written to help convalescent patients more rapidly along the road to recovery than usual, also for individuals following sedentary occupations who need mild exercise of all the muscles of the body. Any layman of even average intelligence, can follow its lucid directions.

A feature that particularly recommends the system is that not a single article of apparatus is required, not even a dumbbell or wand. Having reached a second edition proves its practical usefulness.

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1922-1923.

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THE SURGICAL CONTROL OF EXOPHTHALMIC GOITRE.*

BENJAMIN I. HARRISON, M.S., M.D., F.A.C.S., KNOXVILLE

IN considering the surgical control of exophthalmic goitre it would seem expedient to make the presentation of this subject under the following headings:

1. Pre-operative.
2. Operative.
3. Post-operative.

Pre-operative

On account of the unstable self-control, mental and otherwise of patients suffering with exophthalmic goitre, it is necessary to bear in mind that very small things are capable of causing undue excitement and apprehension. For this reason, the utmost care should be exercised in relieving the patient of such stimuli throughout his treatment. This end can best be accomplished by starting at the time when the patient enters the hospital gradually to acclimate him, so speaking, to his new surroundings. He should be immediately conducted to his room, one that is comfortable and as home-like as possible. It is also advisable to have the patient remain in bed and wear from the beginning the type of clothes that are to be worn on the day of the operation. The routine notes of observation, such as temperature, pulse and respiration, should be started. The united efforts of the professional, anesthetic and nursing staffs play an important role. They should

always give assurance to the patient that his progress is satisfactory and under no circumstances discuss with him the operative procedure. As it is essential for exophthalmic goitre patients to secure the maximum amount of rest some type of sedative should be administered to control the hypersensitive equilibrium of the patient. Sodium bromide, grains 30, given each evening meets this requirement. The complete history and physical examination should be deferred until the patient has adjusted himself to his surroundings and will not be unduly disturbed by this procedure.

When the physical examination and routine laboratory studies are made, great care should be exercised not to tire or upset the patient. The heart should be studied, especially if there is a history of oedema of the ankles. If this condition exists and on examination, a defective myocardium is found, it is necessary to make a phenolsulphonethalein test to determine the functional output of the kidneys. If indicated, a complete chemical study of the blood should be made. Should the physical examination or special laboratory studies uncover pathologic conditions that would contraindicate an immediate surgical procedure, then it is necessary to treat this condition until there is sufficient improvement to permit the operative process without undue danger. During the pre-operative examination, it is essential that foci of infection

*Read at the Knox County Medical Society, Knoxville, Tennessee, on January 10, 1922.

should be kept in mind and steps taken for their elimination if present.

After a thorough study of the patient's reserve has been made and a decision reached in regard to the operative procedure, the patient should be further prepared for operation. Each morning the patient's breakfast should be delayed until a hypodermic of sterile water and inhalations of nitrous oxide plus oxygen have been administered. These procedures are explained to the patient as part of his treatment. By thus accustoming the patient to the steps that are to be taken on the day of operation, all unnecessary stimulating factors will then be eliminated.

In view of the fact that it is most essential to perform the operation without the patient suspecting it through any special preparations, the customary local preparation of the field of operation and the administration of laxatives are omitted. On the morning of operation the patient receives as usual the hypodermic in which, however, morphin, grain 1-6, and atropin, grain 1-150, have been substituted for the sterile water. The inhalations of nitrous oxide plus oxygen, which the patient is accustomed to, are started as usual, but this time the patient without apprehension is anesthetized. The patient is then either operated upon in his bed or taken to the operating room under the nitrous oxide oxygen.

Operative

In exophthalmic goitre the highest degree of graded operative procedures are essential for a low mortality rate. This is always borne in mind and the extent of each procedure is governed by the severity of the disease plus the reaction of the patient. Extremely bad cases are always ligated and operated upon with the patient in bed. The superior pole is the pole of choice and either one or both poles are ligated, as before stated, according to the anticipated reaction. If one pole only is ligated and the reaction following is moderate, then the second ligation is made within three or four days, after which the patient is sent home for a period of rest, returning within two or three months for the next surgical step.

In the severe case where the patient's reserve is not sufficient to warrant a partial

lobectomy without undue anxiety, the operation is performed with the patient in bed. If during the operation the reaction reaches a point where it is unsafe to proceed further, the operation is immediately stopped and the wound dressed without closure. The following day it may be closed, or in certain cases where the reaction has sufficiently subsided, the remaining portion of the thyroid gland may be resected and the wound again packed open or closed as indicated. If packed open, the closure should be made the following day, conditions being favorable. In the mild case the complete bilateral resection may be made and the operation finished at one seance. Each separate operative procedure should not only be well planned and carried through with as little traumatism as possible, but also within the shortest period of time conducive to good surgery.

The amount of thyroid gland to be left varies according to the degree of existing hyperactivity. As a general rule a correspondingly smaller amount of the hyperactive gland should be left than is found in a normal size thyroid gland. Great care should be exercised throughout the operative procedures to protect the parathyroid bodies and also not to damage the recurrent laryngeal nerves by either directly traumatising them or by traumatising the immediate surrounding structures, thus avoiding any scar tissue formation which might involve the nerves. Protective of the parathyroids and recurrent laryngeal nerves is best accomplished by making a resection which leaves a small amount of posterior portion of each lobe of the thyroid gland, that is the portion directly overlying these structures. By adhering to this system of minimizing trauma, deftly controlling hemostasis and immediately stopping the operation in case the reaction of the patient reaches a point near unsafety, the patient is then conducted through the operative period with a minimum amount of damage to the vital organs.

Post-operative

During the immediate post-operative period the patient must be kept as quiet as possible. To this end morphin, grain 1-6, is at once administered hypodermically, repeating the same amount of morphin just as often as

is necessary. Thus the constant strain on the already over-worked mechanism is eliminated and at the same time the heart is conserved. The most suitable position for comfort to the patient is a slight elevation of the head, achieved by placing the patient on an inclined plane, made by so arranging three or four pillows.

It is equally important to maintain the fluid equilibrium. In the severe case this is accomplished by the introduction of saline into the subcutaneous tissues under complete novocain anesthesia. The saline infusions should be started immediately and the amount given should not be less than 4,000 cc each 24 hours. On the other hand where water can be taken by mouth, it may not be necessary to administer the saline infusions except for a very short period. In all cases water by mouth should be urged as soon as the patient is able to take it. This upkeep in the water balance further guards against an excessive high temperature.

The temperature, pulse and respiration are carefully watched. The occasional case may develop post-operative hyperthyroidism, which is evidenced by an excessive elevation of the temperature, pulse and respiration. Post-operative hyperthyroidism when occurring, most frequently presents itself within twenty-four hours following the operation. Radical steps must be taken early to control this increased chemical activity. As a general rule, though sufficient protection is assured through the maintaining of the water balance of the tissues and the control of the restlessness of the patient with morphin and in addition with one or more ice bags placed on the body at the beginning of the post-operative period.

If the temperature begins to rise soon after the operation, then post-operative hyperthyroidism should be suspected and further guarded against by placing additional ice bags on the patient's body. If the temperature continues to rise and reaches 104 degrees F., the patient should be immediately packed in ice and kept there until the excessive chemical activity has ceased, as designated by a lower temperature. The length of time necessary to control an excessive chemical activity varies. Extremely cachetic pa-

tients respond much quicker than do patients with a normal amount of adipose tissue. As a general rule, however, the fall in temperature averages two degrees each hour while the patient is packed in ice. The temperature should be taken constantly and when it drops to 100 degrees F., the ice pack should be discontinued.

For a definite cure the patient must be instructed that the removal of a portion of the thyroid gland is only a part of the cure and that complete co-operation of the patient in regard to habits and work is demanded until the physiological readjustment has been accomplished. During this period of readjustment all stimulating drinks, such as coffee, tea and coco-cola must not be indulged in. Red meats should be eliminated from the dietary. Large amounts of water should be taken daily, excitement should be guarded against and exercise to the point of fatigue should be avoided. Any development of acute or chronic infections should receive immediate medical attention, thus eliminating any remote chance of an infection producing a recurrence of the goitre.

Summary

(1) The thyroid gland is an accessible important link in the exophthalmic syndrome.

(2) The phsyic control of the patient throughout is one of the fundamentals in the surgical treatment of exophthalmic goitre.

(3) Each operative procedure is graded, anticipating the patient's reserve and operating within it.

(4) The pre-operative and post-operative periods are almost equally as important as the operative period.

(5) The bilateral resection of the thyroid gland is only a part of the definitive control of exophthalmic goitre.

(6) A definitive cure, following the blocking of an excessive metabolism by a partial bilateral thyroidectomy, requires the control of all stimulating environmental factors, freedom from excitement and simple diet until the physiological readjustment has been established.

I take this opportunity sincerely to express to Dr. George W. Crile and his associates an appreciation of my surgical training.

THE ART AND SCIENCE OF DIAGNOSIS.*

R. LYLE MOTLEY, M.D., DYERSBURG

IN choosing the subject of this paper it was not my intention to try to bring to light any new scientific facts concerning diagnosis, nor to discuss in particular any diagnostic procedure. It is my intention merely to make a few general observations on the subject of diagnosis in the abstract, in the hope of emphasizing facts already known.

Diagnosis is the keystone of the successful practice of medicine. Having determined the pathology present, any number of text-books will give excellent suggestions and directions as to the line of treatment to be pursued. Many different methods of treatment of the same condition will produce just about the same results in the majority of common ailments, but the correctness or incorrectness of the diagnosis frequently means the difference between life and death of the patient. As example the case of the patient with "indigestion" might be used. If we are content to ask a few questions and write a prescription for some pepsin mixture and hope for the best, then we should be perfectly content to let an inoperable carcinoma kill the patient, or allow a case of pulmonary tuberculosis, nephritis, or some other condition reach an advanced stage before its recognition is forced upon us. Within the past year I saw a patient who had a carcinoma of the stomach advanced to such a stage that the stomach would only hold three ounces of fluid at a time. This man had been to several regular physicians within a year who had done everything from give him indigestion mixtures to send him west for tuberculosis, and the possibility of cancer of the stomach had evidently never been considered as no examination had ever been made to establish the presence or absence of such a condition.

Diagnosis is an art, a science and a philosophy. It is an art inasmuch as it requires the development of the senses to a high degree of perception in detecting the departures from

normal of the various structures and functions. It is a science in that it brings to bear on a given problem the fundamental sciences of physics, chemistry, bacteriology and mathematics, and a successful and correct diagnosis is built on a logical sequence of facts aided by classified knowledge. It is a philosophy as every diagnosis problem furnishes food for profound reflection and exercise of the most versatile mind, and the study of factors which influence departures from normal of structure and function in the human brings us in contact with every human activity and environment. A correct diagnosis requires knowledge of the normal structures and functions, the usual phenomena presented when departure from normal takes place, the ability to elicit these phenomena by every possible means and to recognize them, and a sound judgment to correlate the phenomena and ascribe to each its proper significance and draw conclusions from the mental picture resulting. If all variations from normal in the structure and function of organs caused constant and typical physical signs, then practically no psychologic processes would be necessary to make a diagnosis, and every patient could make his own diagnosis and get his treatment the same way. That which distinguishes the diagnostician is the ability to analyze the case presenting phenomena varying from the typical and usual, and so to interpret the findings that the underlying perversion of structure and function of an organ is discovered.

Every possible agency should be utilized in eliciting abnormal signs. There are a few common conditions such as scabies, smallpox and typical cases of the other exanthemata where usually inspection and an estimation of the temperature suffices to make a correct diagnosis. But such cases are few and far between compared to the number that requires careful analysis to reach a proper diagnosis. We are fortunate in being able to live in a

*Read before the Tri-State Medical Association, Memphis, November 21-23, 1922.

time when the clinical laboratory and the x-ray laboratory are developing methods of precision in examination that help the clinician to such an extent that confusing atypical and borderline cases are daily becoming more amenable to correct interpretation. Such an instance is the development of clinical calorimetry to such an extent that determination of a patient's basal metabolic rate is a very simple procedure, and the status of doubtful and borderline thyroid cases is being established much more satisfactorily and certainly than was the case a short while ago. Our fathers were dependent upon the development of their clinical senses and many of the clinical masters did develop these senses to a startling degree of accuracy. We should take pride in developing the acuity of our senses and should exercise them in every case. But we should by no means rely upon them to the exclusion of methods of precision that have been proven reliable. We all think that we can diagnose a typical case of appendicitis by physical examination, but unless we consider the leucocyte count as a valuable piece of evidence in connection without physical examination we might some day operate on a case of typhoid typhlitis for acute appendicitis, which very thing I have seen done. If such a mistake can be made in apparently a typical case of a simple symptom-complex, how much more likely are we to slip up in cases which are obscure from the start. The first man who discovered that diabetic urine had a sweet taste was searching for a method of precision to comfort him when his physical examination left him in doubt. It is a far cry from tasting sweet urine to the accurate quantitative estimation of blood sugar by methods which we have in use today which clearly and positively establish the status of a patient with glycosuria. It is much more satisfactory to discover aortic aneurysms with the fluoroscope which reveal not a single typical physical sign, than it is to discover them at post mortem or have some other physician discover them after you have failed. It is also a source of much satisfaction to find that a routine Wassermann is strongly positive in a chronic rheumatic case and see the patient promptly improve under specific treatment.

However, just as there are those men who fail to see and take advantage of modern methods of precision, there are those who depend entirely too much on such methods. They want the laboratory to make the diagnosis for them instead of viewing the laboratory findings in the light of another link in the chain of evidence. This attitude is just as reprehensible as that of the man who refuses to use methods of precision. The clinical findings should not be made paramount and the laboratory belittled, nor should the laboratory be depended upon to make a diagnosis. The two sources of evidence are interdependent and a correct diagnosis is only to be made upon the evidence obtained from all sources. A negative Wassermann does not mean that the patient has not syphilis, nor does a positive Wassermann mean that the patient positively does have syphilis every time. I have seen frank cases of clinical syphilis with a negative Wassermann and I have also seen moderately positive Wassermans in conditions other than syphilis. Unless the clinical side of the cases were kept in mind and thoroughly understood there would have been bad mistakes made in diagnosing them. Then on the other hand I have seen cases with no clinical evidence of syphilis whatever, with no history of a primary sore, show a strongly positive routine Wassermann, which when repeated was so uniformly and persistently positive that antisyphilitic treatment was instituted with prompt cure of the trouble for which the patient consulted us. These brief illustrations to show the place occupied by the Wassermann test hold good for the laboratory tests in general, including x-ray. There are of course a few exceptions which are notable by their isolation, such as the presence of tubercle bacilli in the sputum, and lately some authorities are claiming that even the presence of tubercle bacilli in the sputum is not alone sufficient evidence that the patient has the disease, tuberculosis. So it can readily be seen that if all phenomena from all sources are carefully considered and interpreted, the resulting conclusions drawn should be better balanced. While the clinician cannot of course have the time to make the laboratory examinations required in the

study of a case for diagnosis, he should know enough of the technical side of the work to have a thorough understanding of the fallacies of the tests and to appreciate their limitations as well as to evaluate their significance. To be properly equipped for doing any large amount of consulting diagnostic work, the clinician should have his own laboratory with a competent technician, or he should be associated with a laboratory in such a way that he can keep in touch with the work, and in either case should have a good understanding of the technical side of the work. He should have his own x-ray laboratory and should either do his own fluoroscopic examinations or should be present when they are done and should know enough of the work to interpret the average screen and plate shadows for himself. Only in this way can he get the full value from methods of precision. If every obscure case of chronic ailment had routine urinalyses, blood counts, Wassermann tests, etc., as well as *repeated* physical examinations made, the percentage of correct diagnoses would be materially increased.

While correct diagnoses are a source of satisfaction to ourselves and patients, and while we can be pardoned for patting ourselves on the back when we have cleared up an obscure case and had it proven at operation, by therapeutic test, or at post mortem, it is true that we learn very little by our successes. It is from our mistakes that we learn the most. And this statement presupposes that our mistakes are recognized and admitted. If our mistakes are admitted, the facts analyzed and studied carefully, and we openly and impartially make an effort to locate the cause of our mistakes, we are not only fair to ourselves and patients, but we have learned something that will prevent us from making the same mistake again. A study of the records of any large hospital or medical teaching center will show that even under the best conditions, with the best trained clinicians and laboratory workers, and every facility for the study of patients, the percent of incorrect diagnoses is large enough to make us all earnestly stop and consider if we have exhausted every means of determining what is the matter with our pa-

tient in every case, and if after all we are such hot stuff as we thought we were. Cabot of the Massachusetts General Hospital gives very interesting and instructive statistics as the result of a study of three thousand post mortem examinations and the antemortem clinical records. They show an average of sixty-six per cent correct diagnosis in all conditions. For instance in acute nephritis only sixteen per cent were correctly diagnosed, failure to recognize it occurring in sixty-two per cent, and the condition diagnosed when not present in twenty-two per cent of the cases. In lobar pneumonia seventy-four per cent of cases were correctly diagnosed, failure to recognize its presence being the case in fifteen per cent, and the condition diagnosed when not present in eleven per cent. In seven types of cardiovascular disease the average per cent of mistaken diagnosis was thirty-four thoracic aneurysm heading the list with fifty per cent failures and aortic regurgitation being at the bottom with sixteen per cent failures. In the face of such figures the little fellow who is so cocksure and positive in his diagnosis, or the one who specializes in "snap diagnoses" makes a ludicrous picture. The self satisfied doctor who thinks he is a hot shot is due a few sudden jolts. If he is honest enough to admit his mistakes, or knows enough to recognize them, and has the slightest vestige of the spirit of scientific medicine, these jolts are good for him, his patients and the progress of medicine in general.

The causes of mistaken diagnoses are few but most broad. They may be said to be in the main the following:

1. Ignorance.
2. Faulty examination of the patient.
3. Obsessions.
4. Errors of judgment.

Ignorance may be either gross or relative. For gross ignorance, or ignorance of the fundamentals of medicine there is no excuse. An example would be the case of a woman having a chill and a rise of temperature with a pain in the lower abdomen three days after delivery. The diagnosis was malaria without any facts to support such a diagnosis, and quinin and calomel given for several days before a consultant found a leucocytosis of

35,000 with ninety-one per cent polys. with fixation of uterus, and rigidity of the abdominal walls. Fortunately gross ignorance is becoming more rare and can only be remedied by better clinical training.

We are all guilty of more or less relative ignorance, that is, ignorance of the most recent advances in medicine. Medicine is advancing at such a rapid rate now that only constant study and assiduous application will prevent one from becoming in time grossly ignorant. In this connection there will be found two types of men. One will scoff at and refuse to recognize advances as being of value, belittle all innovations, and hold only to that with which he has become thoroughly familiar. The other will eagerly take up every fad, every new technique and theory, and religiously accept them as gospel, without knowing anything of their real worth. These men are the joy and delight of the detail man from the pharmaceutical manufacturing house. The proper attitude is to keep an open mind and always be willing to be shown the value of an innovation, but wait the verdict of competent clinical research workers who are capable of drawing unbiased conclusions, or to investigate their worth ourselves without allowing them to influence us until we have satisfied ourselves of their worth.

In considering the question of ignorance, it must be recognized that there are conditions undiagnosable by the means at present at our command. No man would be criticised for failure to diagnose a hypernephroma with negative urine. If the physician has exhausted every means of examination, and has carefully studied all the phenomena presented, and then fails to make a diagnosis, he has done his full duty.

Faulty examination of the patient is in my mind by far the most important cause of mistaken diagnosis, and it is the one most easily remedied. There is no excuse in the world for failure to examine a patient. This cause of mistakes is made up of a number of factors, such as bad habits in diagnosis, incomplete examinations, jumping at conclusions, etc. I recall a boy of twelve who was taken to his family physician for bed wetting, the parents stating that he was passing large quantities of urine. Without further ado the

physician, who evidently had surgical ambitions, removed a rather long prepuce. Infection of the wound and a very prolonged period of healing did not make him suspicious, nor did the development of an enormous appetite and loss of weight further convey anything to his mind. The onset of a diabetic abdominal crisis with terrific pain caused the physician to send the boy to the hospital for operation where he very promptly died in diabetic coma which developed on the train enroute to the hospital.

The whole body must be examined, and not merely the part of which the patient complains. A few months ago I saw a case that was apparently one of simple chronic synovitis of the knee joint with hydrarthrosis. The patient stated that nothing else was wrong with him, and that there were no other symptoms of any nature. General examination of the entire body revealed some enlarged lymph nodes in the neck and epitrochlear regions, a slight but distinct anemia, all of which led to a Wassermann test which was strongly positive. Antisyphilitic treatment caused the prompt disappearance of all symptoms, the patient gaining rapidly in weight and color. This knee might have been strapped and plastered and baked and massaged and elevated indefinitely with no results if examination had been confined to the knee.

A most important and necessary part of examination is a clear history of the case. The clinician should take his own history from the patient. The recording of it may be left to an assistant, but the patient should be allowed to tell his own story to the physician. All attempts to lead the patient out should be avoided. If leading questions must be asked in order to bring out certain information, they should be so worded that they can be answered in more than one way so the patient can state the exact case. The average patient can be made to give most any kind of history one desires if the questions are put right. So that a man with one idea in his mind who is looking for a certain condition can get a history that will point toward that condition if he will ask the right questions. This brings us to the consideration of obsessions. We are all guilty more or less of obsessions. If we have been making a special

study of a particular condition or disease we are naturally on the lookout for that disease. But the men following the narrow specialties are the most often guilty of allowing obsessions to misguide them. Given a woman with a headache, the oto-rhino-laryngologist will find sufficient deviated septa, enlarged turbinates, infected ethmoids, etc., to cause the headache. The same patient upon applying to a gynecologist will be found to have all manner of prolapses, retroversions, cystic ovaries, lacerated perineums, and torn cervixes enough to cause two headaches. The eye man finds errors of refraction and fits glasses. After her nose has been cleaned out, her round ligaments shortened, one ovary removed, the cervix repaired, and still she gets no relief, some man with no pet theories makes a thorough general examination and finds that she has nephritis, syphilis, chronic constipation, faulty posture or a psychoneurosis. I actually heard a surgeon contend once that a woman who was complaining of dizziness, headaches, nervousness and backache had the cause of her trouble in the various prolapses, tears, cysts etc., in her pelvic organs that are usually found in women who have borne children, and who refused to regard the systolic blood pressure of over 200 which was found to exist, or rather said that the pelvic disorders were most likely causing the elevated blood pressure. To some men every cough means tuberculosis, to others every pain and ache means a gynecologic condition, and to others every fever is malaria, and so on through the whole range of obsessions.

As to errors of judgment, if made honestly, no criticism can be attached. The human brain is not a perfect machine, and you cannot feed in facts and obtain mathematically correct diagnoses in return. But if a thorough examination is made, knowledge of fundamentals is exercised, and calm reflection not tinctured with obsessions is brought to bear and all evidences carefully weighed, the physician has done his duty and a failure to make a correct diagnosis calls for no self reproach or criticism, provided the mistake is analyzed and a determination made to profit by it. Laziness enters into the mental causes of mistaken diagnosis all too often. It is much easier to sit at a desk or by the bed-

side and ask a few questions, guess it's malaria, write two prescriptions and tell the patient that you will see him Tuesday, than it is to get a full history, make a thorough examination, and explain in detail to the patient how he must change his habits, regulate his diet, or whatever is necessary to correct the trouble present in addition to any drugs that might be indicated. The medical profession is in a large measure responsible by reason of laziness and slipshod methods for the existence of osteopaths, chiropractors, christian scientists and other cults. Failure to study our patients and to use all measures of treatment in addition to drugs, the habit of eternally writing prescriptions on the slightest provocation, and the failure to recognize the inseparable relation of the patient's mind to his somatic organism causes the patient to look to other sources than the medical profession for relief of some actual or fancied illness. It is a sad commentary on the profession when chiropractors, osteopaths, and christian scientists frequently relieve our patients of symptoms after one or more regular physicians have failed.

In conclusion let this somewhat rambling dissertation be a plea for more thorough examination of our patient, the recognition of the relation of the patient's psyche to his somatic functions, the freeing of ourselves as far as possible from obsessions, the study of our mistakes, and the constant effort to exercise honest, unbiased judgment in drawing our diagnostic conclusions.

The average practitioner cannot have elaborate x-ray machines, metabolism apparatus, and unlimited clinical laboratory facilities at his disposal, but if he will use his ears, eyes, nose and hands skilfully, diligently and patiently, send specimens to laboratories, not be afraid of consultations, and reflect on and consider all the phenomena that he obtains in this way, and calmly weighs the evidence and draws unbiased conclusions, the number of patients that require refinements of diagnostic technique to establish a correct working diagnosis will become smaller, and the ones that do require such specialized study should be sent to the specialist who is equipped to make the more elaborate examinations and interpret them.

SOME OF THE COMMON DISEASES OF THE THYROID.*

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CHATTANOOGA.

THE thyroid gland has furnished the clinicians and surgeons of all the ages an unlimited supply of food for thought. It is my aim in presenting this paper to clarify some of the more common pathological conditions with which we, as doctors and surgeons, are constantly coming in contact.

Under simple goiter Tyson and Osler give the following synonyms: Bronchocele, thyrocele, thick neck and Derbyshire neck.

Under hyperthyroidism the same authors give the following synonyms: Exophthalmic goiter, struma exophthalmica; Grave's disease; Basedow's disease; Parry's disease; cardiothyroid exophthalmos; tachycardia strumosa.

Maligancy, lues, tuberculosis and suppurative conditions of the thyroid will not be considered in this paper.

Goitre of adolescence, which is purely a physiological compensatory condition, I will only mention, to say that it is never surgical and great care should be manifested on the part of the clinician and surgeon to have a correct understanding of this physiological hypertrophy.

All types of goitre are far more common in women than in men. According to different statisticians 95 to 99 1-2 per cent occur in females.

During the last few years, Kendall has added much to the knowledge of the thyroid function and the nature of its active principle.

After using about fifteen tons of thyroid gland, he isolated the active principle itself and named it thyroxin. To date, through his experimental and research work, he has used I am told, approximately twenty-five tons of human and animal thyroids. When we recall that the human thyroid approximately weighs but a single ounce, we have some idea of the

tremendous amount of the material that he has dealt with.

The thyroid, like all the other somatic tissues, is subject to a number of pathologic conditions and its anatomic and physiologic changes depend upon the nature of its disturbing agent.

The thyroid may be absent at birth. One may be born with the gland hypertrophied.

If the thyroid be absent or if it atrophies early in life, cretinism ensues. If glandular secretion ceases or becomes greatly diminished later in life, hypothyroidism or myxedema develops. In either condition, it can be greatly corrected. When operating, leave about one-sixth to one-eighth of the gland in the adult, and at least one-third in the child.

Wilson, by histologic study of several thousand specimens removed by operation, has furnished the profession with a most elaborate report of his findings in which he describes in detail two very large groups which apparently incorporate all the known varieties.

One of these groups is characterized mainly by a hyperplasia, advancing or regressing with a concomitant secretory disturbance, in which the thyroid secretion is either increased or decreased.

In the other group, he speaks of finding the gland enlarged in part or in whole, not through any hyperplastic change, but through an unwarranted retention of secretion, or through the development of adenomatous tumors, made up largely of embryonic cells.

Taking these two classical pathological pictures as a basis, that masterful clinician, Henry Plummer, began a survey of the entire symptomatology presented by the same patients, whose glands Wilson had studied.

He went further still and laid down a clinical classification entirely different from any published heretofore. This he founded on the combined clinical and pathological pictures entirely.

*Read before the Seventh Georgia District Medical Association, Lafayette, Georgia, May, 1922.

The hyperplastic glands which had caused toxic symptoms, he termed hyperplastic-toxic goiters.

The non-hyperplastic glands which had caused toxic symptoms, he termed non-hyperplastic-toxic goiters and the non-hyperplastic glands which caused no toxic symptoms whatever, but produced trouble in a purely mechanical way he termed non-hyperplastic-atoxic goiters.

Of the three types, the non-hyperplastic-toxic goiter is by far the most dangerous surgical risk, especially when far advanced, and the non-hyperplastic-atoxic is, other things being equal, the least dangerous surgical risk.

It is an unsettled question whether all adenomata eventually become toxic. The more these cases are studied, however, the more convincing is the evidence that every adenoma becomes toxic sooner or later; and that the lack, or severity, of symptoms is only an expression of the patient's resistance to the toxicity of that particular goiter. Certain adenomata apparently produce no symptoms after many years, because the amount of toxæmia is too small to affect the particular host, whereas the same amount of toxæmia might cause much trouble in a less resistant host.

The non-hyperplastic goiter presents no symptoms other than tumefaction, embarrassment as a cosmetic defect on the part of the individual, pressure, and occasionally paralytic throat symptoms. Under this grouping will be found most colossal goiters.

Of course if the colossal type is neglected surgically long enough most will drift into the toxic group. Needless to say that a little explanation on the part of the physician and surgeon would save most of these by operative interference, and would greatly reduce the number in non-hyperplastic-toxic group.

Hyperplastic-toxic-hyperthyroidism, Basedow's disease or exophthalmic goiter, is the best recognized type of thyroid intoxication. It is always associated with a diffuse parenchymatous hyperplasia of the thyroid. Certain other changes have been described in the ductless glands and some observers feel that the thyroid hyperplasia is but one manifestation of a generalized disease, rather than the cause

of it. The symptoms are, however, definitely relieved by removal of a large part of the thyroid; therefore, we may from a practical standpoint regard the thyroid as the cause of exophthalmic goiter.

Symptoms—The symptoms of hyperplastic-toxic-hyperthyroidism or exophthalmic goiter are fairly constant. The facies of an individual suffering from this disease are quite characteristic. The patient is greatly animated, alert to everything that is going on, the eyes following every movement made by any one in the room, thereby demonstrating an unstable nervous system.

The above symptoms are usually noticed in a very casual observation of the patient, and on closer examination you will note tachycardia, very fine tremor of extended hands, and a symmetrically enlarged thyroid, and in a large per cent more or less exophthalmos. A large proportion of cases show a thrill and bruit over the thyroid vessels which is pathognomonic. On questioning the patients you will find that they have lost weight, yet ever since having been sick have manifested a very ravenous appetite, a condition which is only accompanies this disease and diabetes. You will also gain from the patient that weakness has supervened with great rapidity since feeling indisposed, especially weakness in the quadriceps muscles is most pronounced. Some of the most marked cases are unable to rise unassisted, and are unable to step on a stool ten or fifteen inches high. Vasomotor phenomena are common, particularly sweating, a sense of subjective heat, and flushes. Acute gastro-intestinal disturbances occur and indicate very severe toxæmia. Acute vomiting and diarrhoea are contra-indications to surgery.

The systolic blood pressure in these cases is usually from ten to twenty-five points higher than normal.

The metabolic rate is in direct proportion to the degree of intoxication.

Plummer has shown that at an average of nine months from the onset there is an explosion of symptoms that prostrates more or less completely, and gastro-intestinal symptoms often develop at this time. The crisis

reaches a climax and then improvement sets in, if the patient does not die.

After improvement the patient has ups and downs until an average of two years from onset when there is a second crisis; the second crisis is not so severe from the standpoint of toxicity, and patients rarely die at this time. The cardiac condition is, however, much worse. The average cardiac dilatation during the first crisis is half an inch and at the second crisis is one and a half inches. Recovery being the rule, the patient gets better again, but is often left with a very bad heart. Ups and downs of reasonable health are resumed, with little exacerbations of trouble, over a period of from three to ten years, when gradually the hyperplasia of the thyroid, and the symptoms, play out. The end-result may be complete symptomatic recovery, but only too often the end-result is a patient without active intoxication; but a wreck from chronic cardiorenal and hepatic degenerations.

The non-hyperplastic-toxic goiters, thyrotoxic goiter, or thyrotoxicosis is by far the most severe type except carcinoma thyroid. It is one which produces the goiter heart as described by Kocher.

These patients as a rule give a history of an enlarged thyroid for a long time, ten to thirty years, which has never grown rapidly and which has caused very little concern.

As a rule they rarely attain any considerable size and usually manifest themselves as a single palpable adenoma. However, more of them will be found when the gland is exposed at operation in the greater number of cases.

The majority that I have seen, have been in elderly women, rather thin, wiry, and of a nervous temperament.

They come, complaining of headache, dizziness, insomnia, dyspnea, perhaps of fright, and usually they stress the fact that of late they have been suffering from a recurrent palpitation or undue forcibleness of the heart's action. In like manner, their kidneys have been troublesome. Some one has told them they have high blood pressure, another has called it Brights disease, because of the presence of albumen, still another has diagnosed

it arterio sclerosis. In consequence, they are much alarmed over their general condition.

Practically none of these patients have ever suspected the small adenoma situated in the root of their neck as the true causative factor of their trouble, and in fact hardly believe, when it is pointed out as the cause.

All is not yet known of this type of goiter. Its chronicity in development of symptoms is unexplained, nor is it fully understood just why such a large proportion of them manifest cardiorenal symptoms. Is it due to some elective action of the altered secretion on these structures themselves, or is cerebral and nervous derangement back of the process?

There is absent the acute exacerbation of all the symptoms as evidenced in Graves disease.

It requires over ten years for the earliest development of toxic symptoms.

The usual eye symptoms of exophthalmic goiter are absent, as are the gastrointestinal manifestations. The extreme palpitation and cutaneous sensations do not develop as in cases of pure hyperthyroidism but there is, mind you, a definite pursuing unrelenting cardiovascular and renal attack which if left alone will surely cause trouble, yea, much trouble, in the years to come.

Myocarditis ensues in practically every case, sclerosis of the blood vessels take place, functional and organic changes occur in the kidneys, brain muscles, and other organs.

Examination of these patients' hearts reveals an irregular intermittent beat, with an increase in the area of cardiac dullness and with an unusually accentuated aortic second sound.

There is no thrill over the thyroid gland, neither is there a murmur over the superior thyroid vessels as is so often the case in exophthalmic goiter.

I repeat therefore that it is entirely on account of the advanced visceral degenerations that these cases become such a risk, surgically.

Calorimetric study shows that the metabolic rate is high long before any symptoms are evident to the patient; in other words, the onset of toxic symptoms is very late evidence of long-standing chronic intoxication.

Unless they are studied carefully, prepared accordingly, and handled by some one fairly well experienced in goiter work, the operator will almost surely find himself in trouble, either during the operation or some time shortly thereafter.

As a rule, they die of cardiac insufficiency, the heart suddenly goes to pieces, dilates, the pulse changes, increases in rapidity, becomes smaller and smaller, the blood pressure comes tumbling down, the mentality suffers because of cerebral anemia, and the patient perishes in an incredibly short time.

TREATMENT OF COMPOUND FRACTURES OF THE TIBIA, WITH REPORT OF THREE CASES.*

W. F. CLARY, M. D., MEMPHIS

COMPOUND fractures of the tibia are due to direct or indirect violence. The vast majority are associated with fracture of the fibula. If there is much angulation or displacement of the fragments, you always have a fracture of the fibula present, but that is of slight importance.

In discussing this subject I wish to select three cases to report, which illustrate three distinct methods of treatment. I wish to state that the method of treatment of a compound fracture of any bone depends largely on the amount of traumatism sustained by the soft parts—and all of them are considered and treated as infected wounds, or potentially so. All antiseptic precautions are taken with the wound and antitetanic serum should always be administered.

The first case represents the ideal to be obtained in compound fractures, which consists of converting a compound into a simple fracture:

D. B. S., white, female, age 8, undernourished, small for her age, enlarged cervical glands, rales heard over both lungs, suggestive of tuberculosis, but sputum proved negative.

She was struck by an automobile December 1, 1921. Tibia fractured at junction of middle and lower third, lower end of upper fragment protruding through skin, fibula fractured at higher level. She was rushed to the hospital, wound cleansed with iodine and en-

larged, bones approximated, wound closed with silk worm sutures, external lateral splint applied, wet dressing, saturated with alcohol kept applied to wound. At end of fifth day under the fluoroscope, a plaster of Paris cast was applied, a window being cut over the wound, and alcohol dressings continued. Patient was discharged December 24, and wore the cast for three more weeks, when it was removed, wound completely healed, with practically no shortening of leg.

The second case illustrates the failures, complications and disappointments which are likely to overtake any one who has many compound fractures to handle.

This case, a young white man, farmer, about twenty-five years of age, on January 26, 1922, was thrown from his wagon and his left leg was run over by front and rear wheels, breaking both tibia and fibula at lower and upper thirds; the bone protruding from both wounds, with extensive injury to soft parts.

The circulation of the foot was good and for four weeks, in the face of sepsis, sloughing of fascia and muscles, I attempted to save his leg, having it swung on a Balkan frame, in a bent Thomas splint, with a Sinclair skate for extension and traction on foot. The wounds were open and six Dakin tubes were kept busy every two hours with irrigation. But the thigh became infected and on February 23, I had to amputate the middle of the thigh. The patient was in a desperate condition and a guillotine operation was done under gas anesthesia. No sutures were placed, but Dakin irrigations continued. On

*Read by title at the Annual Session of the Tennessee State Medical Association, Memphis, April 11-13, 1922.

March 20, two inches of the femur was removed and wound closed. Patient left hospital on April 8, wound almost healed and in good condition.

The third case illustrates the necessity of attempting to save every leg where the circulation of the foot is good:

Chas. H., athletic, white boy age seventeen, while riding a motorcycle collided with the front bumper of an automobile October 8, 1920, resulting in fracture of the fibula and a compound fracture of the tibia of the left leg. The bone stuck through his trousers, but was protected from street dirt by a leather puttee.

The operation consisted of an incision made through the wound on the mesial surface. Finding that the muscles of the inner and posterior aspect of the calf had been severed by a large fragment of tibia, which by the impact had been knocked through the soft tissues until it rested against the skin of the posterior surface of the calf, with scissors I clipped the skin from the wound to the posterior of the calf, removed the large fragment of bone and trimmed out the macerated

muscle tissue, sutured the muscles with catgut; wired the two fragments of tibia; placed six Dakin tubes in the wound and partially closed it. The leg was placed on a bent Thomas splint—Sinclair skate to the foot with slight traction and swung on a Balkan frame. Dakin irrigations were continued every hour for three days—every three hours thereafter. Wire was removed from tibia November 11. No infection ever occurred, wound healed December 8.

The patient walks and dances without any limp and last summer he was a contestant in the 10 mile swim in the Mississippi.

Summary of treatment:

If possible convert compound fractures into simple ones. If not, get good drainage and use abundant irrigation with Dakin's solution. The management of the fracture depends largely on the extent of injury to soft parts, and this must receive the immediate attention, leaving, if needs be, the fragments for future adjustment. With a portable x-ray outfit this can be satisfactorily accomplished.

DESENSITIZATION AFTER PREVIOUS INJECTIONS OF SERUMS (ANTI-TOXINS, ETC.).*

J. H. LITTERER, M.D. NASHVILLE

WITH the more widespread administration of the serum of immunized animals for prophylactic and therapeutic purposes, the problem of desensitizing the patient who is hypersensitive to the serum arises with increasing frequency.

At present the most widely used serums are diphtheria and tetanus antitoxins, antimeningococcus, and normal horse serum. We are not concerned here with the theories of immunity bringing about this state, such as the specific immune bodies, but with the problem of administering foreign serum in doses to a patient who is hypersensitive to that

serum. Since all of these serums are produced by the immunization of horses, the prevention of accidents is confined to those cases previously injected, and asthmatics and others naturally hypersensitive to proteins of the horse, including hair and dandruff.

Shortly after the discovery of anaphylaxis in 1902 by Richet, it was found by Roseman and Anderson in their pioneer studies that sensitive animals could be rendered refractory, or desensitized, by the administration of a small dose, or small doses, of the same protein previously injected—a dose less than the amount necessary to produce a fatal shock. Besredka and Steinhardt in 1907

*Read before the Nashville Academy of Medicine, February 27, 1923.

made similar observations and called the phenomenon antianaphylaxis.

The first thing with which we are concerned is what constitutes the state of sensitiveness of an individual's blood. When a foreign protein is introduced into the animal body, usually parenterally, after a time a specific hypersensitiveness of the animal for this protein will appear. After a definite interval, a second injection of the same substance, harmless in itself, may produce an itching, fever, edema, violent symptoms of illness, and rapid death may even occur in an animal so inoculated. In other words, the first injection of the protein (serum, milk, egg albumen, etc.) produces no symptoms, but serves to alter the power of reaction on the part of the body cells by rendering them unusually sensitive or susceptible to the same or to closely allied foreign protein. However, a state of sensitiveness may exist naturally in individuals who have never received previous injections of horse serum. This is especially pronounced in asthmatics who exhibit definite attacks when entering stables or are otherwise around horses.

When this changed condition (natural or artificial) of the blood is present, then the patient is said to be sensitive. Therefore, with the understanding of this it behooves us to discover and recognize the condition by searching out the individuals through careful observation and history.

Persons with histories of susceptibilities to asthmatic or hay-fever-like attacks when around horses become grave risks to horse serum. Likewise, careful questioning of the patient as to previous injections before administration is always to be recommended, as there is a potential danger in this type which makes caution imperative in giving serum. Especially in those cases where definite history of natural or artificially acquired sensitiveness exists the injections of the horse serum should be slowly and carefully given. It has been advised that in all cases in which such a history is not obtainable, only a few minims be injected subcutaneously and a few minutes be allowed to elapse before proceeding with the remainder.

The manifestations of serum sickness are

much the same no matter what the route of administration. The frequency with which these reactions occur and their severity depend upon the individual idiosyncrasy of the patient and the route chosen for administration. Given subdurally a reaction occurs in a large percentage of cases; it is, however, more delayed and less severe than that following intravenous injection. When given subcutaneously or intramuscularly, the reaction is much less marked than with either of the other two methods. Rolleston states that the effects are mainly of three kinds:

1. The serum reaction appearing within a few hours.
2. The serum sickness coming on from eight to twelve days after injection.
3. The severe shock or collapse referred to as anaphylaxis, occurring immediately after the the injection.

Desensitization or Method of Prevention of Anaphylaxis.

The term "desensitization" is applied to a condition of insensibility to further injections of the foreign protein (serum) that may follow recovery from anaphylaxis, or be induced artificially by a single or by repeated small injections of the serum during the incubation period following the first injection and before sensitization is completed. The state is usually temporary, the animal gradually becoming sensitive again in a few weeks or months.

Methods of Desensitization.

It is commonly stated that a desensitizing dose of one-half or one cc, should be given subcutaneously before the whole quantity of serum is administered. In some cases this may suffice, but in many cases such a procedure is entirely inadequate. Numerous reports in the literature testify to this. Besredka introduced a method by which he believed desensitization could be accomplished in any patient. It consists of giving intravenously at intervals of from two to ten minutes increasing doses of serum, beginning with one cc. of a one to seven dilution. There are unquestionably some extremely hypersensitive "horse" asthmatics who cannot be desensitized. It nevertheless forms the basis of the methods which offer the best hope of desensitization.

An intracutaneous test should be made with

horse serum in about 1:10 dilution, with a control test of physiological saline solution, or better serum from another animal such as rabbit or sheep. One should wait twenty to thirty minutes before deciding whether the reaction is positive or negative. The interpretation of a mild positive reaction is not always easy. A definite enlargement with erythema usually indicates a positive test. There are a few patients, however, in whom the skin test fails to reveal a state of hypersensitiveness. Likewise, at times, an exact index cannot be obtained from the rapidity and severity of the local reaction. Those cases failing to respond to a diluted serum should be tried with the more concentrated product.

In the *asthmatic* who gives a positive skin test great caution is necessary. The first desensitizing dose should be given subcutaneously, beginning with a dose not larger than 2/100 cc. The dose should be doubled every half hour until one cc. is given. Then one-tenth cc. is given intravenously. After one-half hour the dose is doubled, and so on. In case a reaction occurs one should wait the usual interval, and then the last dose that gave no reaction, or only a mild one, is repeated. The first portion of the serum should always be given very slowly, and careful watch should be kept for respiratory embarrassment, cyanosis, edema and collapse.

In case the therapeutic serum is to be administered intraspinally, the subcutaneous dose should be carried out in the same way (and several) intravenous doses should be given, when, if there has been no reaction, the intraspinal route should be tried cautiously.

As for the *patient who has previously been treated with serum and is demonstrably* hypersensitive by the skin reaction, the same procedure should be followed, even though such patients probably never attain the same degree of hypersensitiveness as the asthmatic individuals with natural sensitiveness. It is quite safe with some of these less sensitive patients, as proved by the cutaneous tests and the initial desensitizing doses, to shorten the program. This is done by increasing the doses a little more rapidly than by doubling

the preceding amount. The first intravenous dose should, however, never be more than one-tenth of the largest tolerated subcutaneously.

In the average individual whose history shows a previous serum administration of several weeks to a few years standing, and who responds to the skin test, the following method is well applied:—

1. One minim of serum intradermally or subcutaneously which will be followed by a zone of swelling and redness within fifteen minutes, if sensitive.

2. Eight minims (one-half cc.) two to four hours later, frequently with less reaction than the first or desensitizing dose.

3. In two to four hours two cc. can be given with a further decrease or diminution in local reaction.

4. In two to four hours the dose can be doubled or the remainder can be given, depending on the number of units desired.

It will be seen that the entire dosage can be given in six to twelve hours, which well meets the requirements as a prophylactic measure, whereas the administration in one injection in all probability would lead to severe shock or even death. Kolmer recommends a very simple and efficient method which will suffice in cases of hypersensitiveness whose cutaneous reactions do not indicate an extreme state of sensitiveness—viz.: a preliminary injection of one-half cc. serum, followed in three or four hours by the remainder. In treatment cases, where circumstances demand the most prompt introduction of the serum into the body, desensitization by the intravenous method or combined subcutaneous and intravenous, is the one of choice. By this means a patient very seldom experiences any discomfort, even the common urticaria or swellings, who otherwise would be unable to enjoy the protection offered by antitoxic measures.

Experimentally on guinea pigs a distinct protective action of atropine sulphate—1/150—1/100 gr.—hypodermically before injecting the serum is exerted against the asphyxia of acute anaphylaxis.

*To Illustrate Long Standing State of
Sensitiveness*

A man, R. W., age 18, entered Protestant Hospital December 25, 1922, suffering from gun shot fracture of right tibia. Past history developed that six years ago antitetanic serum was injected following a punctured wound from a nail in the foot. With this in mind one minim of the antitetanic serum was injected subcutaneously in the region of the deltoid. In a few minutes an extensive erythema developed at the site, measuring approximately four inches in diameter. Three hours later eight minims were injected in the opposite arm with an area of redness of approximately one inch in diameter. Three hours later one cc. was administered but with scarcely any visible signs of redness. Three hours later the remaining three and one-half cc. were given, with no reaction whatever. It is problematic as to the outcome had the entire amount been given in one injection. An index as to the progress of desensitization is roughly shown in the decrease in local reaction with increase of dosage.

Conclusions

1. That every effort should be made to discover those individuals who are either naturally or artificially sensitive to horse serum.
2. When discovered, the history and preliminary skin tests aid in determining the degree of hypersensitiveness.
3. Those who fall into the "asthmatic" class become greater risks and should be dealt with accordingly.
4. Cases without history of natural or artificial sensitiveness a preliminary skin test, or small injection of about one-half cc., is a good practice to pursue.
5. Choice of desensitization method depends upon the degree and type of hypersensitiveness as well as the urgency of administration.

DISCUSSION.

DR. R. L. JONES: The subject of sensitiveness to horse serum has become much more important in recent years through the increasing use of antitoxins and normal horse serums intravenously.

The history of the knowledge of the phenomena of anaphylaxis in infectious diseases really goes back to 1798 when Jenner described the sudden

appearance of an efflorescence of a palish red color" about the point of injection of variolous matter into a woman who had had cow-pox 31 years before.

Magendi, in 1839, found that rabbits injected with egg albumen died after a repetition of the injection, a phenomenon observed sixty-five years after by Theobald Smith, who used injections of horse serum.

Very soon after the use of diphtheria antitoxin began, the medical profession was shocked by the sudden death of the healthy child of a German professor after a prophylactic dose, and in 1896 Gottstein collected eight deaths, four being those of persons not ill with diphtheria. Our present knowledge of anaphylaxis is, however, based upon the observations of Richet and Hericourt in 1898. In 1905 von Pirquet and Shick described what they called "Serum Sickness."

The various theories to account for the phenomenon are too many and complicated to go into. That of Vaughn and Wheeler is probably the one most generally accepted. It is to the effect that the parenteral introduction of a foreign protein stimulates the body cells to produce a specific ferment to digest it, the digestion taking place so slowly that the effects are not recognizable. After the dose of protein is disposed of, the ferment continues to be formed and when a subsequent dose of the same protein is introduced the ferment is in sufficient quantity immediately to split it up, releasing the central toxic molecule in a massive dose, producing the symptoms of anaphylaxis. While the ferment that splits up the protein is specific, they believe that there is a non-specific toxic group in each protein molecule which when liberated by the specific ferment produces the anaphylaxis. This poisonous group being the same in all proteins accounts for the similarity of lesions and symptoms whether the protein is of animal, vegetable or bacterial origin.

It is a remarkable fact that a small initial dose of protein will produce greater sensitization than a large one, and that the sensitization is produced more quickly. The small amount necessary is also surprising. Rosenau and Anderson found one guinea pig that was sensitized by one one millionth c.c. of serum, and they usually used in their experiments 1/250 c.c.

The mechanism of the condition seems to be, as shown by Schultz, to be a hypersensitization of smooth muscle in general, which accounts for the different symptoms in different animals. In guinea pigs the effect is evident in the bronchi, owing to the thickness of the mucosa which is thrown into folds, occluding the lumen. This effect is not produced at all in dogs, rabbits and rats whose bronchial mucosa is thin and poorly supplied with muscle.

Animals vary greatly in their liability to anaphylactic reaction. According to Doerr guinea pigs

are 400 times as sensitive a reagent as the rabbit. Man is not very susceptible to the condition.

Desensitization and testing.

This is more important when serum is to be given intravenously.

The technic varies with the operator, and with almost any technic that involves beginning with small doses and increasing gradually, the danger is reduced to practically nothing. The most elaborate technic I have seen is the one used in the Army during the late war, and which I think is unnecessarily complicated and long drawn out. It is as follows:

To determine sensitiveness, take history. If sensitive to horses, shellfish, etc., or has history of asthma or hayfever, is probably sensitive.

Intradermic test. Use horse serum. Take pulse. Inject intradermically with a fine needle, a fraction of a drop of horse serum. Make control injection of normal saline at the same level of the forearm, so as to avoid transference of serum by the lymphatics. If not sensitive, the bleb caused by the injections will disappear in about five minutes. If sensitive, the bleb caused by the injection of horse serum will enlarge to about the size of a quarter, and will be surrounded by an area of erythema. This occurs in from five to ten minutes, but should be observed for at least thirty minutes. If acutely sensitive, urticarial-wheals will appear elsewhere, or there may be a rash, and dilation of the capillaries of the chestwall, increased respiratory rate, drop in pulse, and blood pressure. (20 mm. mercury.)

If no reaction, give 1 c.c. subcutaneously, and give the balance in from two to four hours. If mild reaction, begin with 1 c.c.. Begin intravenously with .5 c.c., double every half-hour to 2 c.c. Four hours later give serum.

In severe reaction cases give .1, .5, 1, 1.5, 2 c.c. subcutaneously every half-hour. Give the same

doses intravenously, then in one half-hour give 5 c.c. very slowly intravenously. If no reaction, begin slow administration of the balance of the serum at the rate of 1 c.c. per minute, being especially watchful at five, ten, forty, sixty and one hundred c.c. amounts.

Is the danger of severe anaphylaxis great, and does it ever contraindicate the use of serum?

While serum sickness with its attending unpleasant features is rather common, fatal anaphylaxis is very rare. Holt says "the danger is slight and the reported deaths may be regarded as accidental.

Diphtheria antitoxin has been employed for twenty-eight years, thousands, perhaps millions of doses have been given under all sorts of conditions in all parts of the world and the fatalities are so few as to be almost ignored. Kolmer has collected only about thirty authentic cases of death.

Of course, every precaution as has been outlined by Dr. Litterer should be taken, especially when serum is to be given intravenously, as the danger is thereby absolutely eliminated, but if it is impossible to carry out this procedure, as for lack of time on account of the urgency of the condition, the danger from anaphylactic death is probably much less than the danger from the condition from which the patient is suffering. With the precautions taken, the danger is nil, and it may be said that there is no contraindication to the use of serum when it is needed. However, serum should not be given without indications for its use.

A most interesting field of thought is that of the relation of anaphylaxis to the infectious diseases, particularly the eruptive diseases, trying to correlate, as Vaughn has done, the incubation period with the time of production of serum sickness considering each as the manifestation of the same process, that is, the releasing of the central toxic protein molecule by means of the ferments produced by the introduction of foreign proteins.

CASE REPORT.

J. L. MCGEEHEE, M.D., F.A.C.S., MEMPHIS

Mrs. S. B. H., white, female, married, age twenty-four—Admitted to the Baptist Hospital, 8:30 p.m., September 21, 1922. She is the mother of two living children, aged four and two years, respectively. Her labors were normal—she has always enjoyed the best of health. The last menstrual period was April

2, 1922. In May a slight bloody flow appeared for a few hours. In June a slight bloody flow appeared for a few hours. Amenorrhoea since June. Foetal movements were felt first about August 15, 1922, and have been present in a normal manner until two days ago, since which time she has felt none. She has felt perfectly well until forty-eight hours ago when the onset of the present illness occurred. It

*Presented before the Memphis and Shelby County Medical Society, February 6, 1923.

was initiated by intermittent pains located in lower abdomen which have continued since onset, becoming more frequent, until at time of admission to hospital they occur every three minutes. About twelve hours after onset of pains, on arising from bed, there occurred a sudden, profuse, very offensive, milky vaginal flow (sufficient in amount to puddle on the floor). After an hour she had a rigor and a rise of temperature to 101. The vaginal discharge continued throughout the first and second day. Its reported characteristics were its milky appearance and extremely offensive odor. On the morning of the second day (day of admission) she had a second rigor followed by a rise of temperature to 104 by 4 p.m. On admission to the hospital, forty-eight hours after onset, she presented the appearance of a very sick woman. Face is haggard, eyes sunken, skin suffused and clammy, pulse 140, temperature 104, respiration 20, blood pressure 100-50.

Physical examination of the mouth, throat, neck and chest were negative. The abdomen presented the contour of a five or six months uterine gestation. There was present in the lower abdomen a symmetrical, smooth tumor, extending almost to the level of the umbilicus, which was not painful, easily movable and which presented intermittent contractions. There was no muscular rigidity in any area, no tenderness to deep or superficial pressure; no evidence of peritoneal irritation. The spleen was not palpable and the area of liver dullness was normal.

The pelvic examination revealed the following findings: Eight ounces of urine were catheterized; the vulva was negative. On the introduction of the examining fingers into the vagina there was a gush of a whitish fluid which had the odor of placenta and which formed quite a puddle in the bed. The cervix was obliterated; the os about the size of a dime. The foetal head was presenting. The uterus was symmetrically enlarged, soft and movable. The fornices were free and no evidence of any involvement of the paruterine tissues. On introduction of the vaginal speculum this whitish fluid was seen to spurt from the external os, with each uterine contraction. Some of this fluid was taken for

examination, which showed it to contain numerous pus cells and many double chain cocci and diplococci, intracellular, both Gram positive and Gram negative. Cultures were also made. *Blood examination* showed: Leucocytes 22,700; Polys. 92 per cent; L. M.'s 4 per cent; Lymphocytes 2 per cent; S. M.'s 2 per cent. *Urine*: Examination (catheterized) showed: Amber; turbid; acid; specific gravity 1016; albumin a trace; sugar negative. Microscopic examination: no crystals; no casts; few pus cells, three to eight red blood cells.

In the light of the above findings a diagnosis was made of *Uterine Pregnancy at the fifth and one-half month with intrauterine infection of forty-eight hours duration*. The temperature was now 105 degrees, pulse 150. Under synergistic anaesthesia, median laparotomy was done. The operative findings were as follows: The laboratory revealed no evidence of peritoneal irritation, it was smooth and of normal appearance throughout. The pregnant uterus was of normal appearance. The tubes and ovaries were normal. There was no evidence of any inflammatory infiltrate in the paruterine tissues. A supravaginal hysterectomy was done; care being taken to section the creperitoneal contamination by the uterine contents. The cervical stump was touched with iodoine, the usual peritoneal toilet was done and the abdomen closed without drainage.

The gross description of the uterus opened post-operatively is as follows: The uterine musculature in proximity to the decidua was of a grayish color, soft and edematous in marked contrast to the reddish normal color of that near the serosa. The decidua was of a grayish color, bathed with pus and pressure or scraping produced pus from its surface. The membranes had been ruptured over the presenting foetal head. The foetus was dead with evidence of death having occurred several hours previously. The placenta was not detached at any point. Bathing the foetus was the same purulent material that appeared in the vaginal discharge. Culture was made from this intrauterine purulent fluid and entire specimen sent to laboratory. The patient left the table with a pulse rate of 132, pink,

awake, skin moist. The pathological report is as follows:

October 23, 1922.

Laboratory No. 8182.—Mrs. H.—Dr. McGehee—Specimen uterus, foetus and placenta. Clinical Diagnosis: Uterine pregnancy and intrauterine infection.

Description of specimen received: Uterus removed by superavaginal amputation, measures 12x10x8 c. m. Specimen consists of placenta, membranes and foetus intact. Placenta about 10 c. m. in diameter and appears normal on section. The decidua in lower portion of uterus is gray, soft, and covered with purulent exudate. The fetus is female, well formed, about 30 c. m. in length.

Microscopical examination: The decidua shows areas of degeneration and inflammatory infiltration. There are scattered areas of degenerated villi strewn with minute hemorrhages through placenta. No infarcts found. The myometrium appears normal except for several blood vessels filled with inflammatory products.

Pathological Diagnosis; Endometritis Deciduae.

N. E. LEAKE.

The report on intrauterine pus is as follows:

9-22-22.

Fluid examined: Pus from uterus.

Method of examination: Smear and culture.

Smears stained with Gram's stain show a large number of pus cells. Many Gram positive cocci, Gram negative diplococci. Some diplococci intra and extracellular.

First culture shows on blood agar one per cent dextrose media. Pure culture of staphylococcus pyogenes aureus.

Blood cultures were made 9-23. Reported negative after eighteen and seventy-two hours.

The post-operative course was as follows:

Nine hours after hysterectomy—Temperature 98 1-2 degrees, pulse 90; "Feel so much better"—eighteen hours post-operative; temperature 98 degrees and pulse 80—excellent day.

Twenty-four hours post-operative, severe headache, temperature 102.4—pulse 120.

Forty-eight hours post-operative—tempera-

ture 103 degrees, pulse 120—complains of severe pain in top of head and feeling so "tired." Total urine in twenty-four hours forty ounces.

Sixty hours post-operative—temperature 102 degrees, pulse 120, good quality, normal defecation. Feels better—abdomen soft.

Seventy-two hours post-operative—temperature 99 degrees, pulse 100. "Feels so much better," "Slept well," "Feeling hungry."

Patient's temperature and pulse normal after fourth day, convalescence uneventful and was discharged on fourteenth day.

This case was selected to present to you because it sets forth for your consideration the question of *hysterectomy in puerperal sepsis*—its value, whether it is radical or conservative.

DISCUSSION.

DR. MAURY: The case which Dr. McGehee has reported is a difficult one to discuss because of its rarity. I have never seen such a case nor have I encountered a report of such a one in medical literature. However, if I were confronted by such a case I strongly suspect that I would treat it in the way Dr. McGehee has treated his because the traumatism incident to emptying the uterus in a woman as ill as this one was would probably overwhelm her with toxins, or at least insure the development of a septicemia even if it did not already exist.

In a general way the doing of a hysterectomy for puerperal sepsis is not to be commended. A knowledge of the pathological process going on as a result of puerperal sepsis warrants this statement.

For instance, we have two forms of puerperal infection. The one corresponding to the old term of sapraemia, is a bacterial infection of necrotic tissue with the absorption of toxins. The necrotic tissue is soon cast off and with it the infecting organisms. The other is a true wound infection in which there is the infected wound localized and limited by an accumulation of round cells, white cells and endothelial leucocytes. This form of infection will usually take care of itself. Occasionally, the barrier is broken through with formation of milliary abscesses or the formation of one single abscess without invasion of the parametric tissue or the blood stream. These cases, while quite rare, occasionally occur and are the ones in which hysterectomy is justified.

Usually when the barrier is broken through, the septic process extends either by the lymphatics or by the blood vessels, i. e., venous radicles. When by way of the lymphatics, there results a cellulitis or a peritonitis. When by the blood vessels, there

results a bacteriemia or a septic thrombosis of either the ovarian or the uterine veins or of both.

Hysterectomy is indicated in neither one of these instances because the disease has already extended beyond the uterus and a trauma from removal of the uterus will increase the amount of septic material absorbed, open new avenues for its extension and at the same time lessen the patient's ability to withstand the septic process going on.

DR. TOOMBS: In respect to the surgical treatment of puerperal infection two radical operations have been employed, hysterectomy and ligation of the pelvic veins. Placing the indication is the chief difficulty which concerns the obstetric surgeon. I had the privilege of examining the case presented by Dr. McGeehee. There was presented a picture of an intense uterine infection of forty-eight hours duration, and in view of the fact that there was no evidence of spreading infection and an absence of bacteremia we believed extirpation of the uterus offered a more favorable prognosis. The patient was so severely ill that we were of the opinion that a further delay would eventuate in the spreading of the infection to the parametrium, resulting fatally in bacteremia.

Uncertainty exists as to the propriety of removing the uterus in cases of bacteremia, and I would not advocate such a procedure. When one is convinced that the infection has not yet spread beyond the endometrium and metrium the operation of hysterectomy is ideal, but here again is the difficulty—"When do we know the disease is confined to the uterus?"

The reports of hysterectomy done for puerperal infection are rare, and I desire to congratulate the doctor not only upon acumen in diagnosis but also the technique displayed in the performance of a very serious operation.

DR. FRANK D. SMYTHE: The case reported by Dr. McGeehee is one of the first, if not the first of its kind reported to date, so far as I know. I congratulate the doctor upon the distinction he enjoys in that regard and upon the rare surgical judgment he displayed when he blazed the way and deviated from the beaten path, the so-called orthodoxy which the profession has so long traveled.

I have never had a case similar to the one reported by the doctor and do not know what I would have done if I had been placed in a similar position, nevertheless, I endorse the doctor's course, and believe the plan he adopted was sound in principle and proved a success in practice.

Septic infections of the uterus, like the case reported, have been followed in the past by a mortality of about twenty per cent and a much higher per cent of morbidity when treating symptoms, as has been practiced to a great extent hereto-

fore. The removal of the uterus while the infection is confined to that organ is I think the safest and most conservative method of treating the condition and would be followed by a very low mortality rate. In the absence of peritoneal contamination incident to the operation there should be practically no morbidity.

Could one be sure that the infection exists and was confined to the uterus alone the case should be handled as a case of acute uncomplicated infection of the appendix or gall bladder—namely—the organ should be removed while the pathology is confined to the organ. The mortality in such cases would be slight, recovery prompt, and there would be fewer sequelae. Such surgery would, I am sure, be conservative, prophylactic and not radical, as it might appear to be upon the surface. One should be thoroughly convinced of the nature and extent of the infection with which he is dealing, as an operation of such magnitude and of such far reaching consequence should not be performed in cases of doubt, or by an operator of limited experience. The surgeon assuming such a responsibility should be a finished surgeon and a man of much experience.

The surgeon rarely sees a case of puerperal infection until after the infection has passed beyond the confines of the uterus, so it will probably be very rare indeed for us to be called upon to operate upon a patient with puerperal infection where the infection is confined to the uterus. Should we be called to see such a case and recognize it as such I believe that the patient's interest would be best served by doing a hysterectomy. Hysterectomy is not indicated often in cases of puerperal infection where the infection has become general, and in the absence of positive indications the operation is contraindicated. However, I have seen several cases treated by the expectant method, locally and with antistreptococcic serum that pursued a downward course, apparently uninfluenced by the treatment administered and as late as the fourth or fifth week the patient would have rigors frequently followed by very high fever and profuse sweats and examination of the uterus would show the uterus somewhat enlarged, boggy and tender under pressure. I remember having removed the uterus in three such cases, all of whom recovered following the hysterectomy, which I have every reason to believe would not have recovered without the operation.

I believe a case of puerperal infection that has been carefully treated by a competent physician without success should be seen by a surgeon and if examination reveals evidences of abscesses of the uterine wall that a hysterectomy would be justified as a part of the treatment of the case. It goes without saying that a knowledge of how the case progressed and the measures that have been resorted to in the previous treatment of the case should be thoroughly understood by the sur-

geon in order to enable him to reach a correct conclusion as to the real status of the case and what had best be done for the patient.

I am very glad to have heard the doctor's report of his case of acute septic infection limited to the uterus, and wish to congratulate him upon having had the courage of his convictions and the successful result following his method of treatment. Dr. McGehee is probably the pioneer in treating such cases by hysterectomy.

DR. McGEHEE—Closing: In this particular case the hysterectomy was done on the assumption that we were dealing with: 1. An early, virulent form of infection; 2. That this infection was still limited to the uterus; 3. That the infected focus was removable. If these assumptions were true, the hysterectomy was conservative and not radical. It was prophylactic surgery.

It is my belief that in this particular case had a so-called conservative procedure been adopted, that

the subsequent train of events would have been thrombophlebitis, lymphangitis, pelvic inflammation, general sepsis and death. It is my belief that "watchful waiting" would have lost to us the opportunity to remove surgically the focus of infection. It was our belief that there never would be a more favorable time later to do what was done. In fact it is our belief that the passage of time would have directly lessened the chances of radical removal because of its rapid extension into irremovable tissues. It is our belief that the post-operative findings in the uterus justify the pre-operative assumptions above outlined.

As to the general application of this procedure—that is the question. The answer will have to be sought in a careful study of the case in hand, the type of infection, the duration of the infection, the extent of the infection and the probable natural course of the infection. The results will be in direct proportion to the accuracy of the pathological diagnosis.

REPORT OF CASE OF NON PURULENT SINUSITIS ASSOCIATED WITH CHORIO-RETINITIS.

C. D. BLASSINGAME, M. D., MEMPHIS

MR. B. Z. C., age thirty-one, Memphis. Clerk in a shoe store.

Patient was referred to me October 11, 1921 for examination of nose and throat. The trouble for which he came seeking relief was poor vision, which he described as a smoky haziness over the eyes. He first visited Dr. Fagin on September 28, 1921, and the present trouble started four days before that time. Vision at that time was R. E. Counted fingers at two feet; left eye, 20/30. Ophthalmologic examination, as shown by Dr. Fagin's record, revealed a rather large choroidal spot in macula of left eye. Right showed large scars of an old choroidal lesion in macular region. Refraction disclosed one degree of hyperopia in either eye. A negative Wassermann had been obtained when he came to me, also, all teeth had been x-rayed and reported negative.

Patient's past history was as follows: Seven years previously the vision in both eyes grew very poor in a short time, with which he associated some severe trouble with his

teeth and a bad discharge from his nose. Patient consulted an oculist at that time in Jackson, Tennessee, and was told that nothing could be done to save his eyes. The left eye soon grew better and became normal as far as he knew, but the right eye remained almost blind. He does not remember to have had any unusual colds after that until the winter of 1919-20, when he had a very severe cold, which lasted three or four weeks, accompanied by fever, profuse purulent discharge from nose and loss of smell during the time of its severity. This was followed by occasional discharge from the nose up to the present time. Complaints of no constitutional or local trouble.

Examination of nose and throat recorded as follows: Septum deviated to right, obstructing ventilation and drainage of upper nasal chambers. Middle turbinate processes enlarged, having a dark color and boggy appearance. The right one more pronounced than the left one. They impinged on septum on either side. Nasal mucosa, generally, has

a red and thickened appearance. No pus demonstrable. Transillumination showed antra clear. Tonsils appear to be normal. No adenoids. Ears negative. We advised a submucons resection of the septum with the removal of enough of the mid turbinate processes to afford proper ventilation and drainage. Dr. Fagin insisted that the tonsils be removed at the same time, because of the possibility of a hidden focus of infection in them, in spite of the fact that we had reported a negative examination on them.

Operation was done on October 13, under local anaesthesia. It consisted in submucous resection, removal of anterior ends of mid turbinate, and removal of the tonsils. After removing parts of the mid turbinates and more thoroughly exposing the ethmoidal body we found the mucous membranes of this region somewhat oedematous and of a purplish color, thick tenacious mucous hanging around on the surface. Upon removing the tonsils, we found the crypts to be filled with caseous material, which squashed out in long strings when we pushed home the blade of the Sluder's instrument. This material was noted on account of the quantity and its foulness. The appearance of the cryptic contents of the tonsils at operation caused us to wonder if here was not a focus for the production of toxins, or bacteria, which caused the trouble in the eyes. So we waited to see what would happen. What did happen was that the patient's vision continued to grow rapidly worse until on November 26, the vision was less than 20/120. The patient was unable to read the numbers on the shoe boxes, and was seriously considering giving up his position. On this date examination of the nose revealed small quantity of pus at the opening of the anterior ethmoids into the middle meati; x-ray picture made on same date reported by Dr. Chapman as follows: x-ray of sinuses show an increased density of the frontals, more marked on the left. There is evidence of a double ethmoiditis. The antra are not filled, but show some thickening of the walls. sphenoid slightly cloudy."

With the foregoing evidence, and feeling that, if something were not done without delay, the man would soon be blind, on Novem-

ber 29, we did a complete exenteration of the ethmoids and left sphenoid. Following this there was a standstill in the vision for two or three weeks. Then, the vision began to improve. January 5, 1922, vision was 20/30; August 3, vision was 20/20 in the left eye. The vision taken a few days ago was normal and patient says he is not troubled in the least with any haziness over the eyes. Examination of the fundus of the left eye at the present time reveals the spot in the macula, a small dirty white degenerative spot of the retina.

Comment.

Non purulent sinusitis is not rare. It is often much more dangerous than sinusitis accompanied by a profuse discharge of pus. This is explained by P. Watson Williams in this way: "A wound that suppurates is less dangerous than one where there is a lymphangitis that extends and produces a septicemia." He draws the inference that in a purulent nasal sinus affection, the greater the profusion of polynuclears, the less the intoxication, and vice versa. Very frequently patients are seen with an abundant purulent nasal discharge, sometimes with nasal fossae obstructed by polypi, who have no general manifestation whatever, in spite of the local embarrassment. On the other hand we find patients losing weight, run down and feeble, because of septic absorption, presenting mucopurulent nasal discharge of so little importance, apparently, as to escape attention. A sinusitis without pus has been described as a sinusitis in which the leucocytes and polynuclear elements are not sufficient to render the secretion macroscopically purulent. The infection, however, produces toxic elements, which are absorbed and produce systemic or other symptoms of a focal infection.

Dr. Sluder, in his recent volume on "Headaches and Eye Disorders of Nasal Origin," describes the pathology in these cases as a hyperplastic ethmoidal sphenoiditis, resulting from chronic inflammation basing his views on microscopical interpretations of Dr. Jonathan Wright, who examined specimens of tissue submitted by Dr. Sluder.

The diagnosis of this condition is by no means easily made. The mucous membrane

over the sinus regions, including the midturbinate processes, is swollen to a greater or lesser degree and may present a granular or boggy appearance. There is a peculiar purplish color to this mucous membrane, which I think is characteristic, and when the nose is opened by applying cocaine and adrenalin the hidden recesses usually present mucopurulent material, very tenacious, sticking around like cobwebs. The diagnosis is most often led to by the clinical symptoms outside of the nose. According to Watson Williams the more common symptoms of a non-purulent sinusitis are: Recurring coryza, sore throat, bronchial asthma, attacks of bronchitis, catarrhal otitis, periodic depression, lassitude, rheumatism, lumbago, neuritis, rheumatismal arthritis, optic neuritis, ulcer of stomach, appendicitis and neuresthenia, and I wish to add to this list other eye infections including choreo-retinitis. The x-ray is indispensable in making a diagnosis in non-purulent sinusitis. We do not claim that this case proves the causal relation between nonpurulent sinusitis and choreo, retinitis, but their association is significant, and we believe if the focus of infection had not been removed in this case, that he would have gone permanently blind. What part the tonsils played in this case, we are unable to say. It is possible that they played no part, but this leads us to say that we are not always able to make a diagnosis of infected tonsils independent of the general clinical symptoms. In case of a suspected focus the throat man should have the nerve to report a negative finding when there are no local signs of infected tonsils. On the other hand the internist, or other practitioner, should have the nerve to request the removal of ton-

sils when there is definite clinical evidence that they are the cause of general systemic trouble, even though examination of those structures shows negative findings, or to put it a little more concretely, if the patient comes to me from an internist with the statement that there is definite evidence of a focal infection, which can not be accounted for outside the head, if the teeth and sinuses can be eliminated, I feel justified in advising removal of tonsils, even though they do not show any local trouble. In making sections of tonsils, I have frequently found blind abscesses where there was no evidence from the outside that such a condition existed.

To separate the physical findings in tonsils from their clinical manifestations is a dangerous practice. It enables the charlatan to look into a throat, and, with a dramatic gesture, exclaiming with much surprise, "My God! you have tonsils," drive the patient to the conclusion that the medical profession, and especially nose and throat men, endorse the proposition that the fact that a patient has tonsils is the only indication that is necessary for an operation. I believe it is criminal, not only against the patient, but against the medical profession, to remove tonsils without definite indications, and yet there are nose and throat specialists in our city, who say every tonsil should be removed. Such an attitude drives our specialty out of the realm of medical science and reduces it to that of throat carpentry. Not only that, but it brings the whole profession into disrepute among the laity and brings about such a condition of agnosticism that frequently by failing to heed early advice for needed surgical procedures lives are lost by waiting until disease has progressed to the helpless stage.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 154 8th Ave., N., Nashville, Tenn.

MARCH, 1923

REORGANIZATION OF THE STATE DEPARTMENT OF HEALTH.

By the provisions of House Bill No. 183, known as the Reorganization Bill, the State Board of Health was abolished, as was the office of the Secretary and Executive Officer of that Board. There was substituted for the Board an unpaid Council on Public Health, and, in place of the Secretary, a Commissioner of Public Health, appointed by the Governor.

Four divisions are retained under the reorganization plan, namely: Vital Statistics, Rural Sanitation, Sanitary Engineering, and Laboratories. The Division of Venereal Disease Control was not provided for; nor was the Division of Oral Hygiene. The latter named Division was recommended for abolishment by the State Board of Health at its December meeting, 1922. The Division of Venereal Disease control was omitted from the Reorganization Bill, but the rules governing venereal disease reporting are not affected.

It will be the policy of the new Department of Public Health to continue the plan of work that was in existence under the Board of Health. It is hoped that through co-operation with counties and the Division of Rural Sanitation it will be possible to establish at least two full-time departments of health. At the present time there are two such departments in operation.

Tennessee failed in its recent birth registration test for admission into the National Registration Area. The test showed that only eighty per cent of live births were registered. It is hoped that a plan of co-operation can be built up between the Division of Vital Statistics and the physicians, whereby the required percentage of ninety per cent can be made in the next test.

A State Department of Public Health Laboratory is located in each grand division of the State—one in Nashville, one in Memphis, and one in Knoxville. It is hoped that the doctors of the State will avail themselves of the services of the laboratory located in their particular section.

Since the establishment of the Division of Sanitary Engineering, the work of this Division has grown to such an extent that the existing personnel receives more requests for service than is possible to grant. An additional appropriation was requested for this Division, but was not granted. Due to lack of sufficient appropriation, it will be impossible to widen the scope of activities to the desired extent.

To continue the activities of the various divisions along the lines pursued in the past, developing this work and enlarging upon its scope as the occasion and necessity presents itself, will be the policy of the State Department of Public Health.

MEDICAL DEFENSE FEE

For those members of the Tennessee State Medical Association who may be uninformed, it may be stated that the actual operation of the "Medical Defense" does not begin to function for any member until his fee of one dollar is actually in the hands of the Chairman of the Committee on Medical Defense.

LEGISLATION BEFORE THE PRESENT GENERAL ASSEMBLY.

A Statement from the Committee on Public Policy and Legislation

As most doctors know the Chiropractors seemed the passage of a Chiropractic Bill, which automatically licenses all those engaged in practice at the present time, and in addition has other objectionable features.

A supreme court decision rendered some time ago had already legalized them and placed them in an advantageous position. It virtually legalized them without regulating them. We have prepared an amendment to this law and hope to secure its passage.

The unfortunate feature about this situa-

(Continued on Page 498)

Ninetieth Annual Meeting of the TENNESSEE STATE MEDICAL ASSOCIATION

Nashville, April 10th, 11th and 12th, 1923

Place of Meeting

The meeting will be held in the Hermitage Club Building, 211 Sixth Avenue, North. This historic building has been kindly turned over to the Association for Registration, Scientific Assembly, Commercial and Scientific Exhibits.

The Eye, Ear, Nose and Throat Section will meet in the Auditorium of the Lambuth (Doctors') Building, Church St., at Polk Avenue.

Registration

Members are requested to report immediately upon their arrival in the city at the Hermitage Club Building (top floor) and register, after which registration, tickets will be issued for the clinics in the various hospitals. Taxicabs will be furnished free of charge to all the members desiring to attend these clinics.

The Meeting

The Committee on Scientific Program has decided to have clinics during the mornings of the first days of the Session in the various hospitals of Nashville. These clinics will be held on all of the various branches of medicine and surgery and the specialties. The clinics will begin at 8:30 a.m. and run until 2:30 p.m. The reading of papers will be begun promptly at 1:30 p.m. in the ball room of the Hermitage Club Building on Tuesday and Wednesday. The scientific program, exclusive of clinics, will be continued Thursday, beginning at 9:00 a.m.

On Tuesday evening, April 10th, there will be in addition to the Presidential address, three addresses by eminent physicians invited from without the state.

On Wednesday evening, April 11, the members of the Association will be the guests of the Nashville Academy of Medicine at a dinner at the Belle Meade Country Club. This dinner will be held at 6:30 p.m. Conveyances will be provided from the meeting place to the Belle Meade Country Club.

Commercial and Scientific Exhibits

The spacious roof garden immediately adjoining the Assembly room will be devoted to Scientific and Commercial exhibits. The prospects are that this feature of the program will be unusually interesting.

Hotels

The members are familiar with the hotels of Nashville so that the Committee would request that reservations be made direct to the hotels for accommodations.

Golf

Privileges of the Belle Meade, Richland and Standard Clubs will be extended to visiting members of the Association. The Committee on Golf, Drs. L. E. Burch, Robert Caldwell and Perry Bromberg will be pleased to assist in arranging for those who desire to play.

PRELIMINARY PROGRAM

EYE, EAR, NOSE AND THROAT SECTION, 8:00 p.m. Monday, April 9th, 1923.

AUDITORIUM LAMBUTH BUILDING

(SIXTH FLOOR)

- 1 Chairman's Address, Dr. Lewis M. Scott, Jellico.
- 2 "Hypophyseal Tumors—Symptomatology," Dr. Adolph Pfingst, Louisville, Ky.
- 3 "Lung Abscess Following Tonsillectomy," Dr. M. M. Cullom, Nashville. To open discussion, Dr. John J. Shea, Memphis.
- 4 "Choroiditis," Dr. A. C. Lewis, Memphis. To open discussion, W. W. Potter, Knoxville.
- 5 "Vertigo and the Otologist," Dr. Louis Levy, Memphis. To open discussion, Dr. R. E. Sullivan, Nashville.
- 6 "Lesions of the Uveal Tract Associated with Diseases of the Nasal Accessory Sinuses." Dr. Herschell Ezell, Nashville. To open discussion: Dr. R. H. Newman, Knoxville.

- 7 "Improvement of Hearing." Dr. Edwin Watkins, Memphis. To open discussion: Dr. A. B. Dancy, Jackson.
- 8 "The Value of Perimetric Studies." Dr. E. C. Ellett, Memphis. To open discussion Dr. G. C. Savage, Nashville.
- 9 "The Direct Method in Intra-laryngeal Surgery." Dr. Richmond McKinney, Memphis. To open discussion: Dr. W. L. Simpson, Memphis.
- 10 "Sinus Infection in Childhood." Dr. J. McC. Hogshead, Chattanooga. To open discussion: Dr. H. E. Christenberry, Knoxville.
- 12 Dr. H. H. Shoufflers, Nashville, "Head Injuries."
- 13 Dr. R. O. Tucker, Nashville, "Version."
- 14 Dr. K. S. Howlett, Franklin, "Country Obstetrics."
- 15 Dr. Richmond McKinney, Memphis, "Lye Strictures of the Oesophagus."
- 16 Special Order 2:00 p.m. April 11th.—Dr. J. Rilus Eastman, Indianapolis, Ind.
- 17 Dr. J. Howard King, Nashville, "Three Years Experience with Radium."
- 18 Dr. C. N. Cowden, Nashville, "The Routine Gynecological Patient."
- 19 Dr. M. B. Davis, Nashville, "Twelve Cases of Tetanus."
- 20 Dr. C. C. McClure, Nashville "X-ray Diagnosis—Typical Cases."

Clinics will be held on Monday, April 9th, by the members of this Section in Nashville at St. Thomas Hospital, beginning at 8:00 a.m., and continuing through the day.

GENERAL SESSION.

Ball Room Hermitage Club Building, Tuesday April 10th, 1:30 p.m.

- 1 Dr. Hazel Padgett, Nashville, "Hemorrhages in and Around Nerve Tissue."
- 2 Dr. J. B. Haskins, Chattanooga, "Splenectomy, with Report of Case."
- 3 Dr. Bryce W. Fontaine, Memphis, "Wassermann—Fast Syphilis."
- 4 Dr. William Litterer, Nashville, "Comparison of the Wassermann Test with the Kahn Flocculation Test in One Thousand Cases."
- 5 Dr. W. D. Haggard, Nashville, "The Diagnosis and Management of Stones in the Common Duct, Review of thirty cases."
- 6 Dr. S. W. Coley, Memphis, "Deductions from a Review of One Thousand x-ray examinations of the Gastro-Intestinal Tract."
- 7 Dr. R. L. Sanders, Memphis, "Peptic Ulcers."
- 8 Dr. E. H. Baird, Dyersburg, "Traumatic Peritonitis from Non-Penetrating Injuries."
- 9 Dr. Geo. H. Price, Nashville, "Glasses."
- 10 Dr. P. M. Farrington, Memphis, "Ethmoiditis and Its Management in Children."
- 11 Dr. E. T. Newell, Chattanooga, "Fracture of Patella; Open Operation; Absorbable Suture."

Note: Inasmuch as it was necessary to go to press with this copy several weeks before the meeting, there will be more papers read than listed above and it will not be too late when the Journal reaches the members for any them to secure a place on the program if they will send in the title immediately.

NIGHT SESSION

TUESDAY, APRIL 10

Ball Room Hermitage Club Building, 8:00 p. m.

Presidential Address—Dr. H. M. Tigert, Nashville.

Oration in Surgery—Dr. E. Starr Judd, Rochester, Minn.

Oration in Medicine—Dr. Marvin L. Graves, Galveston, Texas.

Address—Dr. Olin West, Chicago, Ill.

LEGISLATION BEFORE THE PRESENT GENERAL ASSEMBLY.

(Continued from Page 496)

tion is that the state has placed the stamp of its approval on this form of practice.

A bill has been introduced providing for the repeal of the law creating the board of preliminary examiners. This is our standard law. The proponents of this repeal bill feel that the standard law is responsible for the dearth of doctors in some rural sections of the state.

All the medical colleges in this country have entrance requirements equal to or higher than the requirements of this law.

The dearth of doctors in certain rural com-

munities is not peculiar to Tennessee; it is a condition that exists in every rural section, regardless of the character of its laws.

We have as many doctors as ever. They have shifted to towns and cities and in many cases to other rural sections. The reason for these changes is economic as a rule. There are some communities that will not support a doctor.

It will be remembered that the farmers have suffered more than any other class from the economic conditions that have existed in the past three years. I know of some doctors who have had to change locations in order to "get by" economically.

In these times of economic stress the doctor is the last person paid, and the number of cases not paid at all is materially increased. The tax gatherer get his, the bank cashier gets his with interest, the implement man gets his, etc., etc. None is left for the man who *credits all*, and rarely asks for security.

The standards did not make this shift take place. The destruction of standards will not benefit the situation. Some economic shifts will benefit the situation.

The repeal of the objectionable features of the narcotic law will most likely be passed.

The outlook is favorable for the passage of our amendment to the Workmen's Compensation Law.

We have thought to defer action on this bill until a complete amendatory act is brought up. This law has many objectionable features and a new law out and out is desired by most people concerned.

Doctors can be of material aid by asking their representatives to support the passage of the measures we seek.

The Committee on Public Policy and Legislation.

DEATHS

HUMBOLDT PHYSICIAN DIES

Dr. Sidney Thompson Succumbs to Heart Failure at 62.

Dr. Sidney Thompson, the oldest physician in Humboldt, Tenn., died from heart failure in that city at the age of 62.

Until his health began to fail about a year ago Dr. Thompson had been actively connected with sanitariums in Nashville and Knoxville, having served for a number of years in both cities.

He had lived in Humboldt for twenty years and had endeared himself to all who knew him by his many unselfish and kindly acts.

Dr. Thompson is survived by his widow, Annie Palmer Thompson, and a sister, Mrs. J. N. Andrews of Memphis. He was a brother-in-law of Judge John W. Palmer of Humboldt.

COUNTY MEDICAL SOCIETIES

OBION COUNTY MEDICAL SOCIETY

(Reported by Dr. Ira Park, Secretary-Treasurer.)

At the last regular meeting in 1922 the following officers were elected for the ensuing year: Dr. F. W. Watson, Union City, President; Dr. E. A. Boswell, Troy, Vice-President; Dr. Ira Park, Union City, Secretary-Treasurer; Dr. E. H. White, Rivers, Censor 1926.

The following address was read by the retiring President, Dr. Carlton, before a joint meeting of the Obion County and Dyes County Medical Societies:

CO-OPERATION

Gentlemen of the Obion and Dyer County Medical Association:

In this coming together of neighboring medical fraternities a short paper on co-operation seemed to me to be in order.

Men have always grouped themselves together for purposes of efficiency and mutual good, and, while discordant elements have ever been present to mar and retard, nevertheless great things have resulted from such efforts, imperfect though they may have been.

While the medical fraternity has by no means a monopoly of the co-operative genius, (rather otherwise) and while no phenomenal outcome is expected from this contribution on the subject, it is about the matter of co-operation (or toleration) among our every-day members, that the writer asks your consideration for a short time.

First of all, next to the gospel of Jesus Christ, our motive is greatest. You have been

told this motive before, but hear it again: Service.

The great unions of our time seem to be cemented by selfishness, but this is not true. The admixture of selfishness which unfortunately pervades the unions so strongly is a centrifugal, or separating and not a cementing property of these great bodies, and the unions and brotherhoods, so called, survive in spite of, and not because of, selfishness. They perform and have performed a real service.

But more directly with reference to our own class. Our motive, our reason for existence—is self-evident, and founded on this rock of truth our fathers have built an organization dedicated to mankind and have placed in our hands the banner of service. We are charged to carry on.

It seems to me that without the loyal support of the individual members of the County Medical Association the scheme of organization would crumble. And it seems, further, that without some such organization as now exists in America, medicine would be a vast chaos. Thanks to the men that have the divine grace of unselfish service we have our great American Medical Association with which it is a distinct honor to be enrolled, and a doctor denied this honor is in the sad plight of 'The man without a country.'

While we deplore the fact that we as an organization do make possible, and furnish livelihood for, all manner of pretenders and parasites, nevertheless the faithful must redouble their vigilance to offset these very fellows for the great work must go on.

A failing we all possess to a greater or less degree is that of looking at the other man's fault rather than our own. Let us avoid our own errors and honestly try to understand and help the other man.

Another trouble is our indifference. It should not be necessary to drag members out to society meetings. Yet we all are guilty of carelessness about attending the county medical society meetings. It is hard to keep up an interest in everyday humdrum things.

Chief of all is the honest, everlasting, hole-proof, golden-rule professional ethics which should exist at all times in the heart of every man who is dignified and honored by the de-

gree of Doctor of Medicine. *Could* we but do the right thing ourselves, and when the other fellow does step on our toes or elbow us pretty roughly, simply overlook it or put a benign rather than malignant motive behind it! We could reason thus: "Inasmuch as this man who has offended me is a two-legged creature, pretty much like me, it must follow that, since I myself am peculiarly free from meanness so likewise no doubt is he. I shall refuse to stay offended." Thus a certain amount of immunity is soon established, so that what was otherwise offensive causes but slight reaction upon the ego and fails to set up the hate-complex in us.

There is too much work too, for us to fall out over small things. Besides it hurts every one of us every time we turn loose a colony of suspicion or hate germs inside of us.

"There is so much that is bad in the best of us,

And so much that is good in the worst of us,
That it ill becomes any of us,
To talk about the rest of us."

HAYWOOD COUNTY MEDICAL SOCIETY (Reported by Dr. J. S. Edwards, Secretary-Treasurer.)

Election of officers for the year 1923, is reported as follows: Dr. John Chambers, President; Dr. W. R. Miller, Vice-President; Dr. W. L. Edwards, (re-elected) Secretary-Treasurer.

HAWKINS COUNTY MEDICAL SOCIETY (Reported by Dr. J. S. Lyons, Secretary-Treasurer.)

The Society meets the first and third Wednesday of each month at the Hale Springs Hotel in Rogersville with good attendance and which is even expected to show an increase with the coming of the more pleasant season of the year.

At the meeting held on February the third, the following officers were elected for 1923: Dr. W. C. Lyons, Surgoinsville, President; Dr. J. E. Miller, Rogersville, Vice-President; Dr. J. S. Lyons, Rogersville, (re-elected) Secretary-Treasurer.

WHITE COUNTY MEDICAL SOCIETY (Reported by Dr. A. F. Richards, Secretary)

Dr. C. E. Tubb of Sparta was elected President, Dr. A. A. Bradley, Vice-President, Dr. A. F. Richards, Secretary and Dr. E. B. Clark, Delegate, with Dr. E. O. Jenkins as alternate for this year, 1923.

MARSHALL COUNTY MEDICAL SOCIETY (Reported by Dr. S. T. Hardison, Treasurer)

For the year 1923 the officers of this society will be: Dr. S. A. Moffitt, Cornersville, President; Dr. J. B. White, Lewisburg, Vice-President; Dr. S. T. Hardison, Lewisburg, Treasurer; Dr. T. E. Reed, Lewisburg, Secretary.

BRADLEY COUNTY MEDICAL SOCIETY (Reported by Dr. H. W. Harris, Secretary-Treasurer)

The following members were elected as the officers for the year 1923: Dr. T. R. P. Chambers, President; Dr. R. L. Bean, Vice-President; Dr. H. W. Harris, Secretary and Treasurer.

LOUDON COUNTY MEDICAL SOCIETY (Reported by Dr. T. J. Hickman, Secretary.)

The following officers will serve the Loudon County Medical Society during 1923: Dr. Thomas Penland, Philadelphia, President; Dr. G. M. Hall, Lenoir City, Vice-President; Dr. T. J. Hickman, Lenoir City, Secretary; Dr. J. G. Eblen, Lenoir City, Treasurer.

MADISON COUNTY MEDICAL SOCIETY (Reported by Dr. B. C. Arnold, Secretary.)

The Society now has thirty-five members in good standing and the following officers have been elected for 1923: Dr. R. S. Brown, President; Dr. J. L. Field, Vice-President; Dr. B. C. Arnold, Secretary.

KNOX COUNTY MEDICAL SOCIETY (Reported by Dr. Jesse C. Hill, Secretary.)

Regular weekly meetings are reported throughout the year.

PUTNAM COUNTY MEDICAL SOCIETY (Reported by Dr. Lex Dyer, Secretary.)

The Putnam County Medical Society met the first Thursday in March and elected Dr.

Lex Dyer, of Cookeville, as delegate to the Ninetieth Annual Session of the Tennessee State Session of the Tennessee State Medical Association, with Dr. L. S. Love, of Silver Point, as alternate.

SMITH COUNTY MEDICAL SOCIETY. (Reported by Dr. B. J. High, Secretary.)

The Smith County Medical Society has elected Dr. Rhae E. Garrett of Dixon Springs as delegate to the annual session of the Tennessee State Medical Association, with Dr. R. E. Key, of Monoville as Alternate.

NASHVILLE ACADEMY OF MEDICINE AND DAVIDSON COUNTY MEDICAL SOCIETY

(Reported by Dr. J. O. Manier, Secretary.)

The annual program for the weekly meetings of this society has been printed and issued.

The title of the paper to be read, the name of the author and the name of the member designated to open the discussion, is given for every meeting night in the year.

Officers for 1923 have been elected as follows:

Dr. D. R. Pickens, President; Dr. L. J. Caldwell, Vice-President; Dr. J. O. Manier, Secretary-Treasurer.

Delegates to Tennessee State Medical Association:

Dr. Robert Caldwell; Dr. W. G. Kennon; Dr. R. L. Jones; Dr. C. F. Anderson.

SUMNER COUNTY MEDICAL SOCIETY (Reported by Dr. T. E. Wright, Sec-Treas.)

The following officers were elected at the last meeting of the Sumner County Medical Society for the year 1923:

Dr. C. C. Fowler, Hendersonville, President. Dr. W. N. Lackey, Gallatin, Vice-President. Dr. T. E. Wright, Bethpage, Sec-Treas. D. L. M. Woodson, Gallatin, delegate to the Tennessee State Medical Association, with Dr. John R. Parker of Gallatin as alternate.

Dr. Duncan Eve, Jr., read a very interesting paper to the Society on "Injuries of the Head," which was greatly appreciated and discussed by all members present.

MEDICAL NEWS AND NOTES

TO EXAMINE DOCTORS FOR ARMY COMMISSION.

A preliminary examination of applicants for appointment as first lieutenants in the medical corps of the regular army will be held from July 16 to 20, inclusive, at all military stations in the Fourth corps area, where there is sufficient medical personnel to constitute the examining board. This examination is open to all male American citizens between the age of 22 6-12 and 31 6-12 years at the time of examination, who are graduates of an acceptable medical school and who have had at least one year's hospital training subsequent to the completion of a four-year course of instruction in such medical school, or in lieu thereof, have served one year as medical officer of the United States army, between April 6, 1917, and July 1, 1919.

Candidates who successfully pass the preliminary examination are tendered a commission in the medical officers' reserve corps. If they accept they are then placed on an active duty status with pay under their reserve commission and ordered to the Medical Field Service school at Carlisle Barracks, Pa., for a four-months period of observation and instruction and then given a final examination.

PROPOSED LEGISLATION REDUCING FEDERAL NARCOTIC TAX.

Through the efforts of the Bureau of Legal Medicine and Legislation of the American Medical Association, and with the cooperation of Dr. John J. Kindred, a fellow of the Association and the representative in Congress from the Second New York Congressional District, a bill has been introduced for the reduction of the tax imposed on physicians and certain related professional groups by the Revenue Act of 1918, to the merely nominal amount, one dollar a year, originally provided in the Harrison Narcotic Law.

On no sound, discoverable basis can the present tax of three dollars a year on physicians, under the amended Harrison Narcotic Law be justified. To the extent that the tax is in excess of the minimum necessary to give

the federal government jurisdiction over the physician as an agency engaged in the distribution of habit-forming drugs, it is an occupation tax, unjustly discriminating against the medical profession and the allied groups subjected to its exactions. It is for the physicians of the country to see that the tax is discontinued, or at least reduced to the amount named in the original law, one dollar a year: if not by this Congress, then by the next.—*Jour. A. M. A.*, Feb. 17, 1923.

NASHVILLE ACADEMY OF MEDICINE AND DAVIDSON COUNTY MEDICAL SOCIETY

At the regular weekly meeting of the above Society, on Tuesday, February 19, the following resolution was passed unanimously:

Whereas, the State Legislature has seen fit to discontinue the appropriation to carry on the work of the Bureau of Rural Sanitation of the State Department of Public Health. Therefore: Be it resolved, that it is the sense of the Nashville Academy of Medicine and the Davison County Medical Society that the discontinuance of this work would materially handicap the service of the State Department of Public Health to the rural population of Tennessee.

THE SOUTH CAROLINA MEDICAL ASSOCIATION.

The South Carolina Medical Association will hold its 75th Anniversary Home-Coming meeting, in the city of Charleston, April 17, 18 and 19, 1923.

It is desired to get in touch with every South Carolina doctor living outside of the State, and every graduate of the Medical College of the State of South Carolina.

Communications may be addressed to Dr. E. A. Hines, secretary of the South Carolina Medical Association, Seneca, S. C.

Dr. Murray B. Davis has resigned the position of Resident Surgeon to the Nashville General Hospital and has taken offices in the Lambuth Building, Nashville.

OPENS NEW HOSPITAL AT JOHNSON CITY

Dr. W. G. Jones, of Johnson City, Tenn., is opening an Eye, Ear, Nose and Throat Hospital.

There will be a charity ward, and also a free clinic each Monday and Friday from one until two o'clock in the afternoon.

INCOME TAX FACTS

The revenue act of 1921 provides that an income tax return shall be filed by every person, married or single, whose gross income for the year 1922 was \$1,000 or more. Broadly speaking, gross income includes all income received by the taxpayer during the year from salary or wages, or from "business, trade, profession or vocation," dealing in property, or the transaction of any business carried on for profit. Net income, upon which the tax is assessed, is gross income less certain specified deductions for business expenses, losses, bad debts, taxes, contributions, etc.

Among the most important items in the returns of many taxpayers are the deductions for business expenses. In the case of a storekeeper, they include a reasonable allowance for salaries paid employees, amounts spent for advertising, premiums for insurance against fire or other business losses, the cost of water, light, heat and fuel used in his place of business, drayage and freight bills.

A professional man, doctor or lawyer, may claim as deductions the cost of supplies used in the practice of his profession, expenses paid in the operation and repair of an automobile used in making professional calls, dues to professional societies, subscriptions to professional journals, office rent, and the cost of fuel, light, heat and water used in his office, and the hire of assistants.

The farmer may deduct all amounts paid in the production, harvesting and marketing of crops, including labor, cost of seed and fertilizer purchased, cost of minor repairs to farm buildings (other than the dwelling, which is personal expense) and cost of small tools used up in the course of a year or two. Rent paid for a farm also is an allowable deduction.

Deduction of personal or living expense such as rent paid or a dwelling, hire of domestic servants, education of children, etc., is expressly disallowed by the revenue act.

MISCELLANEOUS

SUGGESTIONS FOR HISTORY TAKING IN SYPHILIS

JOSEPH EARLE MOORE, M.D., AND ALBERT KEIDEL, M.D., JOHNS HOPKINS UNIVERSITY
From the monthly Venereal Disease Bulletin of the Tenn. S. B. of H. in co-operation with the U. S. P. H. S.

The following outline of questions necessary for accurate history taking in syphilis, is that in use for the instruction of students in the Syphilis Department of the Medical Clinic of the Johns Hopkins Hospital. It has been suggested that the outline may be of interest to practitioners of medicine.

In so protean a disease as syphilis, accurate history taking is imperative. In many instances, a diagnosis of syphilis, must stand or fall on the information elicited by questioning. It is our daily experience to meet with individuals who tell a story of a previous genital sore, diagnosed elsewhere as syphilis and treated with a little mercury or a few arsphenamins. Such a patient may desire information as to whether or not he is cured. A thorough clinical and laboratory examination fails to reveal any evidence of syphilis and it then becomes necessary to decide whether the original diagnosis was correct, and if the patient actually had syphilis. Inasmuch as the majority of patients in this group have been given pitifully inadequate treatment, it is obvious that the whole future course will depend on a proper decision. This can only be arrived at by a correct interpretation of accurate questioning.

We have frequently found it necessary to deplore looseness of terms in history taking. Such statements as "the patient had a chancre in 1898" are not permitted in our work. The examiner must use the term "genital sore," with a careful description of its characteristics, and is allowed to use the term "chancre" only after his own mind is made up as to the accuracy of the statement.

We have found the outline given below to

be of the utmost value in our own work. It must be used, of course, as an addition to the usual questions asked in taking a routine medical history, including particularly anesthetic data relating to the cardio-respiratory, gastro-intestinal and genito-urinary systems.

A series of questions is suggested, study of which will bring out the essential factors. In a history of syphilis it is important to state answers either positively or negatively. Where definite lesions are present a complete description should be given.

Syphilis may be either congenital or acquired. When congenital syphilis is suspected the family history is of the utmost importance. In acquired syphilis it is necessary only in so far as direct communication of the other members of the family is concerned (marital history). Questions will depend upon the stage of the disease; in a patient with a chancre questions as to tertiary and neurosyphilis are superfluous; on the other hand, in a suspected tabes, for example, all of the points below should be considered. Not infrequently a patient will have no knowledge of the nature of his illness, previous manifestations having been overlooked or misinterpreted, and it then becomes necessary to reconstruct a history of syphilis from data given or implied in the patient's statements, and from replies to well directed questions.

Family History—(a) If a congenital syphilis is suspected, the history is often better obtained from parents or close relatives than from the patient.

Father and mother? If living, age and state of health? Have they been examined for syphilis and with what result? If dead, age at and cause of death with particular reference to "strokes," paralysis, "softening of the brain," locomotor ataxia, insanity, heart disease, rheumatism? The order and result of pregnancies in the family with dates? How many still born? How many miscarriages (important)? Duration of pregnancy at time of miscarriage? Time or relation of miscarriages to other pregnancies? Brothers and sisters living? Age and state of health of each? Did any ever have snuffles or cold in the head at or shortly after birth,

generalized skin rash, peeling eruption on the palms and soles, or sores about the mouth and anus early in life? Any other eruptions in early childhood? Any eye trouble (interstitial keratitis)? Any ear trouble? Any bone trouble (periostitis)? Swollen joints? Notching of second teeth? Convulsions, idiocy or feeble mindedness? Have the living children been examined for syphilis and with what result? Brothers and sisters dead. How many? Age at and cause of death?

(b) If acquired syphilis—Is patient married? How long? Age and state of health of partner? Symptoms of syphilis in partner? Pregnancies, how many, order of occurrence and what result? Number of miscarriages, still birth, deaths in infancy? Indicate in the scheme, if possible, the point when syphilis enters the family history. Living children, name, age, and sex of each? Any manifestations of congenital syphilis in offspring (see above)? Have the living children been examined for syphilis? What result? (In the colored race it is well to inquire for pregnancies regardless of marital state).

History of Syphilis—Proceed by a definite routine, as suggested by the following outline. The method differs somewhat in males and females, and in early and late cases.

Primary—(Male). When did the patient have a genital sore? (Do not use the word chancre. Its location on the penis or elsewhere on the genitalia (frequency of chancroids at the frenum)? Its time relation to sexual exposure if definitely obtainable? Who was the partner—professional prostitute, street walker, friend, wife, etc? (Be tactful in questions about wife or husband). Was the sore single or multiple? Painless or painful? Shape round or irregular? Size? Spreading rapidly or not? Base clean or dirty? Much discharge, and if so, character? Hard or soft to touch? Elevated or depressed? Color? How long did it last? Complicated by bubo? If so was this painful or painless? Did it break down and suppurate? Was it incised? Unilateral or bilateral? Did the patient show the sore to a physician? His name? How soon after the onset? His diagnosis? Was a dark field examination made? Result of this? What

was the treatment—local or general (see below)? What effect did treatment have on the sore? Was a Wassermann done, and if so with what result? Has the patient ever had more than one genital sore? If so date and character of each (see above)? If he denies sore altogether, did he ever have gonorrhea (strain, clap)? How long did it last and what were its complications (endo-urethral chancre)? If he denies all possible primary genital lesions, did he ever have secondaries (see below)? Is there a history of a possible extra-genital primary (lips, tongue, tonsils, fingers)? Its characteristics (see above with special reference to satellite adenopathy)?

Primary—(Female). In females the history of a primary sore is often difficult or impossible to obtain, because so many occur without the patient's knowledge (cervix, vagina, small sores on nymphæ, etc.).

Were there any sores about the privates? Their characteristics (see above)? If not, was there ever a vaginal discharge? When, and what was its duration and character? Any symptoms pointing to a Neisser infection (dysuria, redness, swelling and pain of the genitalia, pelvic inflammatory disease, etc.)?

Secondary Manifestations—(No difference in men and women). Cutaneous rash? Its time relation to a possible primary? Its distribution? Character of lesions? Color? Elevated or not? Itching? Other subjective symptoms Duration? Sores in the mouth? Their relation to tobacco? Their location (lips, tongue, etc.) Their character? Sore throat? Sores about the anus or genitalia? Their character—elevated, ulcers, piles, etc.? Alopecia? Headache? Its severity? Worse at night or in the day time? (Syphilitic pain is practically always worse at night). Its duration Malaise? Fever? Bone (osteocopic) pains? What bones? Worse at night? Were bones tender to touch? Any joints involved? Inflammation of eyes? Any glandular swelling? Were any of these lesions seen by a physician? His diagnosis? Treatment? Its effect on lesions

Tertiary Manifestations—(Inquire for lesions occurring 1-7 years or more after onset

of disease). Time of appearance of lesions? Their distribution (asymmetry)? Eruptions anywhere on the body? Their character? Ulcers? Periostitis? Painful swelling (especially on exposed bones such as cranial bones, clavicles, sternum, ribs, tibiae, and ulnae)? Their chronicity? Their relation to trauma? Their tendency to heal and break down again? Tissue loss? Scars, pigmented or not? "Rheumatism"? Persistent headache worse at night? Sore throat? Aphonia? Fluid regurgitation through the nose? Loss of weight? Feeling below par? Any visceral complaints? (The necessity of inquiring of every case the essential points in the medical history relating to respiratory, G. I., and G. U. tracts, and especially the cardiovascular system, is again emphasized).

Neurosyphilis—(The order of appearance of symptoms is of great importance). Headache? Location and character? Intermittent or continuous? Worse at night? Scalp tenderness? Vertigo? Difficulty with sense of smell? With vision? Diplopia? Noticeable squint Difference in vision between day and night? Trigeminal neuralgia? Facial weakness or paralysis? Deafness, unilateral or bilateral, complete or incomplete, onset sudden or gradual? Tinnitus? Difficulty with taste? Speech defect? Trouble with swallowing? Difficulty in walking? More marked at night? Tendency to stumble going upstairs? More definite ataxia in upper or lower extremities? Lightning pains? More indefinite rheumatic pains? Girdle pains? Girdle sensation? Paraesthesias in hands or feet? Gastric upsets (crises)? Constipation? Bladder trouble—difficulty in starting or completing flow of urine? Loss of sexual desire? Of sexual power (libido and potentia)? Joint trouble (Charcot)? Aphasia, transient or permanent? Paralysis partial or complete? Hemiplegia? Changes in mentality? Changes for the worse in habits and personal appearance? Disposition belligerent? Over talkative? Delusions of grandeur? Of persecution? Hallucinations? Subjective loss of memory? Inability to concentrate? Change in writing? Tremor? Any more vague complaints referable to the nervous system? Loss of weight?

Laboratory Examinations—Were Wassermanns made at any stage? If so, where, by whom, with what result, on what dates, more especially the last? Has the spinal fluid ever been examined? What was the result?

Treatment—An accurate outline of previous treatment should be attempted. By whom administered? Local or general? What drugs? As exactly, as possible, what dates was it given? Determine preparation of drugs used, dosage, interval between doses of arsphenamine, effect of treatment on lesions, and whether treatment was intermittent, continuous, or unsystematic.

THE RESOURCEFUL GENERAL PRACTITIONER OF MODERN MEDICINE

Frank Billings, Chicago (*Journal A. M. A.*, Feb. 24, 1923), says that the time has come for plain statements in regard to modern medical practice, with the purpose of bringing the public and the members of the medical profession as a whole back to good common sense views. It is his purpose to attempt to show how the general practitioner may continue to occupy the important place in the field of practice which was his until recently. He says that in their work, not all general practitioners are resourceful and sure of themselves. This fault is due, in some instances, to inadequate early training, but in a majority of men it is due to laziness and failure to take advantage of the opportunities afforded all physicians. The physician who makes all possible use of his daily clinical opportunities learns something new and useful every day of his professional life. Naturally, this daily clinical study develops the powers of observation and manual dexterity in physical examination and in treatment. The knowledge which this ever increasing experience affords is refined and stabilized by purposeful reading of standard textbooks and periodicals, by association with fellow practitioners and by the discussion of papers read before medical societies, and by writing papers on subjects which the physician's daily clinical observations justify. Membership and active participation in the work of the county medical society is of great educational benefit to the physician. It affords personal contact with

fellow practitioners in the courteous discussion of medical subjects and professional problems, promotes mutual respect and good will, and is a potent factor, conducive to increased self-respect and self-reliance on the one hand, and to a decrease in the size of the hat, if imaginary megaloccephaly makes one a nuisance to his fellows. Concisely written reports of interesting clinical observations presented before medical societies and for publication are a splendid means of self-education, and are justified because they furnish a valuable addition to medical literature. Diagnosis is the most important factor in the practice of medicine. With due regard for the value and need of all the splendid ultrascientific laboratory and instrumental methods of physical and functional diagnosis in investigatory medical work, they are needed in the routine clinical care of not to exceed twenty per cents of all the patients of any urban or rural community. Unfortunately, many lay people have been made to believe and apparently a large number of physicians think that the routine application of the ultrascientific methods of diagnosis is necessary in the majority of cases. The fact is that the diagnosis can be made in fully eighty per cent of all cases by a resourceful general practitioner who will efficiently use his brain, special senses, hands and an always available simple and inexpensive laboratory and instrumental equipment. The history of the past and present condition of the patient is one of the most important, if not the most essential, factor. A majority of practitioners do not make written records of their patients; these are absolutely essential to accuracy in diagnosis and efficiency in practice. The conscientious practitioner will make a careful, general physical examination of practically all patients who seek his services. An occasional patient with a slight ailment, and especially those with slight injuries or lesions requiring surgical treatment, are exceptions. Daily practice in technic and judgment is the program which every physician must follow to become a skillful diagnostician. The practitioner can gain much by observing others at work in organized clinics or by taking postgraduate courses in diagnosis, when these are available; but

the efficiency of the practitioner in diagnosis is mainly dependent on his own industry and determination to make the most of his own clinical opportunities. There is a growing custom in urban practice for general practitioners to have the routine laboratory examinations, such as urinalysis, blood estimations and other simple tests, made and the results interpreted for them at the numerous available commercial laboratories. In Billings' opinion this is a great fault in practice; it would be quite as rational for the practitioner to depend on available organized clinics for the physical examinations and diagnosis of patients. For the few patients who require laboratory or instrumental tests which involve special knowledge and technical skill in their application, such as blood chemistry, serology, bacterial cultures, elaborate blood counts, electrocardiography and efficient roentgenology, the practitioner should make use of the excellent commercial laboratories, public clinics and available state, county and municipal public health laboratories. Billings believes that the preservation of the general practitioner, as the most important factor in the field of practice, is dependent, chiefly on himself. He must keep abreast of the advance of modern medical knowledge and practice, chiefly by his own efforts. If he strives to improve and help himself he will be successful; will justify his importance in the medical field, and will attract the ill and injured to his door because of his professional individual superiority as compared with men in narrower fields of practice, alone or in public or private groups. The necessity for the preservation of the general practitioner in the city and in rural districts, for the general public good, justifies and demands that the organized medical profession should assume leadership in educating the public to understand and comprehend the need of hospital centers, including diagnosis facilities in every community financially capable of self-support.

FIRST AID BY AIR

Among all the spectacular achievements credited to the airplane none has possessed more human interest than the flight of a doctor from Selfridge Field, at Mount Clemens,

Michigan, to Beaver Island, more than twenty miles out in Lake Michigan, to render first aid to a young fellow who had suffered a fracture of the skull in an accident in a log jam. The island had no physician and the ice on the lake was in such condition that it was considered impossible to get there by any other means than airplane.

The government was appealed to, and its aviators finally managed to make the trip successfully, though it was necessary to rise above a blinding snowstorm and combat engine trouble all the way. One man failed and was forced to land without reaching his destination. It was a most courageous thing to do and it is pleasant to be able to record that the injured man is doing well and likely to survive. Death would have been almost certain without the aid of the airplane.

The fact that another doctor fought his way over fourteen miles of dangerous ice in order to treat the injured man makes another story, and one of unusual heroism. The man who would endure such perils for the sake of living up to the best ethics of his profession deserves mention on his own part. The second doctor reached the island and the patient there long after the first one had arrived by air, but he was carrying out the best traditions of his profession in a most excellent fashion.—*Nashville "Banner."*

"Who's that guy you were talkin' so nice to?"

"Aw that's me old family druggist."

"What did he say?"

"No."

—*Pharmaceutical Advance.*

THE VISIT OF M. COUÉ.

Emile Coué, druggist of Nancy, France, has come and gone, heralded and accompanied by a campaign of advertising which has rarely been equaled, making promises of hope to the helpless and afflicted. His visit to Chicago gave the opportunity to hear M. Coué and to observe his methods. The man himself gave an impression of sincere, though naive, earnestness. He seemed childishly pleased with the testimonials he had received, and

genuinely convinced that he had made a discovery of great benefit to mankind. Of the many cults that have grown up around such methods of healing, this appears to be the first that has not been erected on a religious basis with more or less specific claims of Divine inspiration, a lack of the mystical which will probably result in speedy oblivion. Coué was careful to insist that he is not "a healer" or "miracle worker," and protested against the demands that he exhibit his powers: demands that were an inevitable result of the publicity he has received. M. Coué claimed that much of human suffering and disability is psychic in origin, the outcome of faulty thinking. All that is necessary for its relief is a change in the mode of thought. This can be achieved by the persistent and insistent repetition of a formula, which disavows the trouble. He acknowledged that some things cannot be changed, as for example the loss of a leg, and that it is useless to attempt "the impossible." However, despite the protestations that he will not attempt "the impossible," Coué frequently finds it "impossible" only when he fails. One of the patients subjected to "treatment" at the Chicago meetings was an elderly woman, emaciated, feeble, short of breath, and with every appearance of cardiovascular disease. This poor woman was urged, stimulated and encouraged to walk vigorously, even to run. Under the stimulus of the excitement, she succeeded temporarily by the exercise of every reserve of energy, and after having served the purpose of this ruthless demonstration, retired from view, to sink panting and exhausted in a chair. No more serious results was evident, but risks had certainly been taken without thought to the possible dangers, which were obvious to any physician. The atmosphere of the Coué demonstration contained much to recall the vaudeville hypnotist, now almost extinct; the magic words, the mesmeric passes and even the old trick of suggesting to members of the audience that they could not separate their hands, after they had pressed them tightly together, all bring back memories of the professional hypnotist. Had it not been for the pathetic background of the crippled, deformed and disappointment-doom-

ed dupes that filled the stage, the scene would have been humorous. The methods and theory with which Coué works are as old as history. Nancy, the town from which he came, was the home of a school of scientific hypnotism, under the leadership of Liebeault and Bernheim, which was famous in the sixth and subsequent decades of the last century. It is an error to assume that physicians have ignored such merits as do underlie these practices. The abrupt relief of hysterical symptoms by suggestion and persuasion is a commonplace in the practice of the average physician. Suggestion has a distinct place in therapeutics; unconsciously, it is used by every successful physician in the form of encouragement and optimistic prediction. It is the basis of Eddyism. But suggestion, while it may, and often does, give temporary relief, does not cure; it must be accompanied by investigation and remedy of the underlying causes, whether psychic or physical.—*Jour. A. M. A.*, Feb. 17, 1923.

REPUTATION

The following splendid interpretation of the responsibilities of reputation, written by Mr. McCauley, the President of a well-known automobile firm, may well be applied definitely to the medical profession.

"The man who builds and the man who buys are both beneficiaries of a good reputation. To the one it is a continuous spur and an incentive—to the other the strongest of all guarantees that what he buys is worthy. We sometimes speak of winning a reputation as though that were the final goal. The truth is contrary to this. Reputation is a reward, to be sure, but it is really the beginning, not the end of endeavor. It should not be the signal for a let-down, but, rather, a reminder that the standards which won recognition can never again be lowered. From him who gives much—much is forever after expected. Reputation is never completely earned—it is always being earned. It is reward—but in a much more profound sense it is a continuing responsibility. That which is mediocre may deteriorate and no great harm be done. That which has been accorded a good reputation

is forever forbidden to drop below its own best. It must ceaselessly strive for higher standards. If your name means much to your public—you are doubly bound to keep faith. You have formed a habit of high aspiration which you cannot abandon—and out of that habit created a reputation which you dare not disown without drawing down disaster. There is an iron tyranny which compels men who do good work to go on doing good work. The name of that beneficent tyranny is reputation. There is an inflexible law which binds men who build well, to go on building well. The name of that benevolent law is reputation. There is an insurance which infallibly protects those whose reason for buying is that they believe in a thing and in its maker. The name of that kindly insurance is reputation. Choose without fear that which the generality of men join you in approving. There is no higher incentive in human endeavor than the reward of reputation—and no greater responsibility than the responsibility which reputation compels all of us to assume. Out of that reward and out of that responsibility come the very best of which the heart and mind and soul of man are capable."

VACCINATION IS 2,000 YEARS OLD

"Vaccination is an outgrowth of man's effort to protect himself from pestilence by using nature's methods of defense," says Dr G. W. McCoy, director of the Hygienic Laboratory of the U. S. Public Health Service. "Primitive man noticed that recovery from a first attack by most diseases gave immunity against other attacks; and some 2,000 years ago he began to inoculate his fellows with smallpox when conditions seemed propitious instead of waiting for nature to do it at some time when conditions might be very unpropitious.

"Inoculations against smallpox were made in India and in China as early as 300 B.C. Later, when the disease reached Europe, inoculation went with it, supplemented by a new method called "selling smallpox"—ex-

posing a well person to contact with one ill with the disease so that if he survived he would be proof against it.

"Inoculation differs somewhat from vaccination as devised by Jenner, but the principle is the same. Moreover, long before Jenner's day it was known that an attack of cowpox gave immunity from smallpox; and records show that men who had recovered from cowpox had themselves inoculated with smallpox to make the proof conclusive. Jenner, however, as he himself says, 'placed vaccination on a rock' where he knew it would be immovable.

"Before the days of vaccination conservative estimates show that one-third of all persons had smallpox and one-tenth of all deaths were due to it. Today smallpox is rare; many physicians have never seen a case; and, where vaccination is consistently practiced no deaths from it occur. Formerly smallpox was considered a child's disease; and it still is a child's disease—where infantile and school vaccination is neglected. Witness the Philippines, where four or five years ago, after years of neglect of vaccination, an epidemic swept away nearly 50,000 persons, a large percentage of whom were children under ten years of age.

In the United States, well vaccinated communities show low smallpox rates—Maryland with one-tenth case per thousand population; New York with one-fourth per thousand, the District of Columbia with .14 per thousand. Poorly-vaccinated States tell another story: Oregon with 1.45; Washington with 1.27; and Kansas with 2.0 per thousand and population.

Some communities wait till an epidemic breaks out and then rush to vaccinate. These stop the disease—after it has caused many deaths and has "branded" many survivors. Sixteen months ago, in Kansas City, an epidemic of smallpox began, yielding 350 cases and 123 deaths; and a few months later another started in Denver and yielded 950 cases and 288 deaths. Such epidemics always end the opposition to vaccination in the community—for a time.

BOOKS RECEIVED

"YOUR INNER SELF," by Louis E. Bisch, A.B., M.D., Ph.D. 195 pages. Doubleday Page & Company, Garden City, New York, 1922. With an introduction by William A. White.

To quote from the preface: "Many books have been written about the intricacies and mysteries of the mind. The very multiplicity and diversity of mental processes and the dominant role they play in determining happiness or misery, success or failure, indicate the interest everyone should feel in them.

Out of the wealth of data, sometimes conflicting, which has been laboriously gathered by scientific investigators, sufficient information has been correlated to make at least certain mental reactions understandable. Theories based upon this attested knowledge are found to be of practical use in everyday life. Nobody can afford to treat carelessly or in a scoffing spirit the trend of scientific thought on so vital a subject.

The brain is the controlling sensitizer—the switchboard—of the entire organism, organic and functional. An insight into its workings cannot fail to be invaluable to any individual. The scientist is no longer satisfied with the older "effect psychology" which confined itself to observing the results merely of brain activity, but he looks deeper and searches for causes and reasons. If he can discover why a person behaves in such and such a way under certain circumstances rather than in some other manner, he will in time be able to regulate the cause, i.e., the behavior itself. We are beginning to realize that men and women, despite hereditary influences, are not the victims of fatalistic predetermination. They can in large measure become captains of their souls—if they only know how. Knowledge of the inner self is essential to self-mastery.

No human being can hope to guide his own craft toward efficiency and happiness unless he is honest and plucky enough to acknowledge his weaknesses, and has the courage and persistence to probe his inmost thoughts and face what he finds there."

This book if not actually, is practically a one-syllable edition of Freud and, as this, in popular form, is a most useful thing for the thinking public, it places Freudian theories before it in an assimilable form to accept or reject as its own intelligence dictates, though the trend of the author cannot be disregarded.

On the whole it is most fortunate that such a primer on psycho-analysis should be put before inquiring individuals.

It is clear, unambiguous and "he who runs may read."

PHYSICAL DIAGNOSIS. By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the University of Arkansas: Visiting Physician Little Rock City Hospital, Baptist Hospital, and St. Vincent's Infirmary, Little Rock, Ark. Third edition completely revised and enlarged. 755 pages, 6x9, with 319 illustrations, and 1 color plate: Price, silk cloth binding, \$8.50. St. Louis, C. V. Mosby Company. 1922.

This volume is a revised third edition of a text-book treating the subject of physical diagnosis from the student's point of view. The contents cover the clinical anatomy of the thorax and abdomen: physical examination of the chest, circulatory system, abdomen, head, neck, and extremities, and the nervous system; the clinical pathology, physical signs, diagnosis and differential diagnosis of a number of diseases; and a chapter on the x-ray diagnosis. There are many interesting and instructive original illustrations and there are a number selected from other authors.

In the new third edition the chapters dealing with the physical examination of the circulatory system and with blood pressure have been completely revised and enlarged. A chapter dealing with electrocardiography and diagnosis of cardiac arrhythmias has been added.

The subjects are presented clearly and precisely, and an attempt is made to explain the physical phenomena on a rational basis. This is essentially a practical text-book for the student and the practitioner.

S. P. B.

AN INTRODUCTION TO THE PRACTICE OF PREVENTIVE MEDICINE, By J. G. Fitzgerald, M.D., F.R.S.C., Professor of Hygiene and Preventive Medicine and Director Connaught Antitoxin Laboratories, University of Toronto, Assisted by Peter Gillespie, M.Sc., C.E., M.E.I.C., Professor of Applied Mechanics, University of Toronto, and H. M. Lancaster, B.A.Sc., Director of Division of Laboratories, Provincial Board of Health, Ontario, and Demonstrator in Sanitary Chemistry, Department of Hygiene and Preventive Medicine, University of Toronto, and Chapters by Andrew Hunter, M.A., M.B., F.R.C.S., J. G. Cunningham, B.A., M.B., D.P.H., and R. M. Hutton, with Appendix Articles by various contributors 826 pages and 129 figures. St. Louis. C. V. Mosby Company, 1922. Price \$7.50.

Dr. Fitzgerald states that: "The time has arrived, when in a much larger measure, physicians in general practice must become integral factors in the public health program. Community cleanliness, control of communicable diseases, arrangements for the supervision of milk and water supplies, with adequate provision for a public health nursing service is paid for by taxation. But there is need of the co-operation of the family physicians

in addition, to ensure the smooth running of the public health machine. Full-time public health workers, administrators, physicians, sanitary engineers, public health nurses and others, provide the personnel for the execution of that part of the work for which the organized political unit pays. This additional service should supply the necessary care and supervision of the general health of individuals in the community. For this task no one is so well qualified as the physician in general practice. He cannot only take a place, perhaps on a part-time basis, in the organized and official health work, but what is more important he can and will, become the supervisor of public health of the individual family.

To outline some of the work of the physician who is to function on the preventive as well as the curative side of medicine is the purpose of this book."

IMPOTENCY, STERILITY AND ARTIFICIAL IMPREGNATION. By Frank P. Davis, Ph.B., M.D., Fellow American Medical Association; Member Medical Veterans of the World War; Ex-Secretary Oklahoma State Board of Medical Examiners; Formerly Superintendent State Institution for Feeble-Minded; Author of "How to Collect a Doctor's Bill"; "The Doctor's Book of Poems"; Formerly Editor Davis' Magazine of Medicine. Second edition. Revised and enlarged. 168 pages. St. Louis. C. V. Mosby Company, 1923. Price \$2.25.

In his treatment of these subjects the author occupies about the first third of the little book with a discussion of the effect of stimuli to the sexual instinct as received through special senses, with much emphasis upon that of the sense of smell and its action upon the internal glandular secretions that may affect sexual impulses.

The chapter on "Therapeutics" almost smacks of medievalism.

It is not possible entirely to disregard some grammatical unconventionalities.

DISEASES OF WOMEN. By Harry Sturgeon Crossen, M.D., F.A.C.S., Clinical Professor of Gynecology, - Washington University Medical School and Gynecologist in Chief to the Barnes Hospital and The Washington University Dispensary; Gynecologist to St. Luke's Hospital; Consulting Gynecologist to the Jewish Hospital, St. John's Hospital and the St. Louis Maternity Hospital, etc. Fifth Edition. Large octavo; 1005 pages; 934 engravings; 1 color plate. St. Louis. C. V. Mosby Company. Price \$10.00.

This standard work appears again. "By its fruits shall ye know them." It has reached a fifth edition and maintains its high place as a textbook and one of reference.

The mechanical excellence equals its other good features.

NUTRITION OF MOTHER AND CHILD (Lippincott's Nursing Manuals). By C. Ulysses Moore, M.D., M.Sc. (Ped.) Instructor in Diseases of Children, University of Oregon Medical School. Including Menus and Recipes. By Myrtle Josephine Ferguson, B.S., In H.Ec., Professor of Nutrition, Iowa State College, Ames, Iowa. 8vo. with 33 illustrations. 234 pages. J. B. Lippincott Company, Philadelphia, 1923. Price \$2.00

The important discoveries in nutrition made during the past five years have revolutionized our ideals of dietetics. This volume presents the facts of nutrition which have been accepted by schools of accredited standing everywhere. The book lays particular emphasis on the newer conception of breast feeding, the building up of breast milk, vitamins and the mineral content of the diet. Nothing is included which has not been tested and proven of practical value in personal experience. The volume is written in simple straight-forward English and as untechnical as is feasible in the presentation of scientific facts. It is so arranged that it may be employed by nurses and social workers for instruction of mothers in the homes and in conducting short courses in nutrition.

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HYDROCEPHALUS*

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ASSISTANT DEPARTMENT OF SURGERY, VANDERBILT SCHOOL OF MEDICINE. ATTENDING SURGEON
ST. THOMAS, VANDERBILT AND NASHVILLE GENERAL HOSPITALS.

THIS paper is intended as a partial review or discussion of some of the more recent advances made in the study of hydrocephalus. This disease has hitherto ranked as one of the most intractable diseases of childhood. Numerous surgical procedures have from time to time been instituted for its relief, but almost without exception they have failed. The rare occasions on which they have succeeded have left us wondering whether the success was due to the procedure or was merely a coincidence, because spontaneous arrest of hydrocephalus does occur, though very rarely. This unsatisfactory state of affairs depended largely upon erroneous ideas regarding the etiological pathology of the disease.

In 1862 Hilton in his lectures on "Rest and Pain" described varieties of hydrocephalus due to the congenital obliteration of the aqueduct of Sylvius and to occlusion of the foramina in the roof of the fourth ventricle. This early clue as to pathology produced no operative interference in the past, of lasting or definite value, and we owe to Dandy and his co-workers the establishment of operative principles which hold out the prospect, so far as

we can at present tell, of the permanent cure of the disease.

Recently Fraser and Dott of Edinburgh, report on their observation and clinical experience with twenty-one cases studied during the last four years.

I wish here to state that this paper is based upon, and is largely an abstract of their rather exhaustive report, together with a brief review of the experimental and clinical work of Dandy and his co-workers.

In the beginning it is probably best that we review briefly the processes involved in the production and absorption of the cerebrospinal fluid, and the relationship of the parts connected with its circulation. Such knowledge is fundamental, because the development of hydrocephalus necessarily entails an error either in the production, circulation or absorption of the fluid.

Dandy, by his experiments on dogs, has proven that the bulk of the cerebrospinal fluid is produced by the choroid plexuses in the lateral ventricles. He occluded the foramen of Monro by a strip of fascia and dilatation of the corresponding lateral ventricle resulted. He occluded the iter by means of an oiled gelatin capsule, containing cottonwool and a dilatation of the two lateral and the third ventricles ensued. He repeated these

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, March 12, 1923.

experiments excising the choroid plexus of one lateral ventricle, which caused a complete collapse of the cavity. Removal of both choroid plexuses resulted in collapse of both ventricles, but not so completely since the choroid plexuses of the third and fourth ventricle share to a limited extent in the production of cerebrospinal fluid. The ependymal lining of the ventricles does not take part in the production of the fluid.

It is not yet possible to say whether the method of production of cerebro spinal fluid by the villi of the choroid plexuses is one of secretion, filtration, or dialization. The fluid differs so widely from the secretion of most other glands and it so persistently retains its freedom from contamination by such body fluids as bile in jaundice, or by drugs when they are injected into the body, that we must assume that whatever the method of production, a very strong selective action is at work. Production of fluid probably begins about the fifth month of foetal life, because it is there that the perforations of the foramina of Majendie and Luschka are first demonstrable, and they are the only obvious means of escape of the fluid from the ventricular system. Fraser and Dott think that the perivascular spaces of the cerebral vascular system, share to a limited extent in cerebrospinal fluid production. There are no lymphatics as generally understood, in the brain and meninges. These perivascular spaces contain a fluid of a much simpler constitution than lymph, which passes into them from the blood vessels. They communicate with the subarachnoid space.

Cerebrospinal fluid formed in the ventricles circulates along the ventricular system and escapes into the large cisterns of the subarachnoid space by way of the foramina of Majendie and Luschka of the fourth ventricle. These large cisterns at the base of the brain serve a two fold purpose. They stabilize the fluid pressure and make possible the uniform distribution of the fluid over the surface of the spinal cord. It is from the subarachnoid space that absorption takes place. The exact method of absorption from the subarachnoid space is not clearly understood. It is not now believed that the Pacchionian bodies play any great part, since they are only present in man and certain anthropoids and are only

demonstrable in adult life. Weed and his co-workers have demonstrated what they have termed "arachnoid villi," consisting of delicate coil like structures of interlacing strands of connective tissue projecting from the arachnoid into the dural sinuses. They believe the cerebrospinal fluid passes into the dural blood sinuses through these villi and that the Pacchionian bodies, are only examples of hypertrophied "arachnoid villi," seen in adult life. Surgeons have noticed on the outer surface of the dura, faint oozing, through what appear to be tiny pores, and the blood here has a distinctly watery appearance. Weed demonstrated small nests of mesothelial cells in the dura and in continuity with the arachnoid villi and thinks that same fluid escapes through these to the outer surface of the dura, for absorption into the blood. The passage of cerebrospinal fluid from the villi into the venous sinuses is both a process of filtration, from a point of higher to a point of lower pressure, and of osmosis, from a fluid of low colloid and crystalline content to one of a higher content.

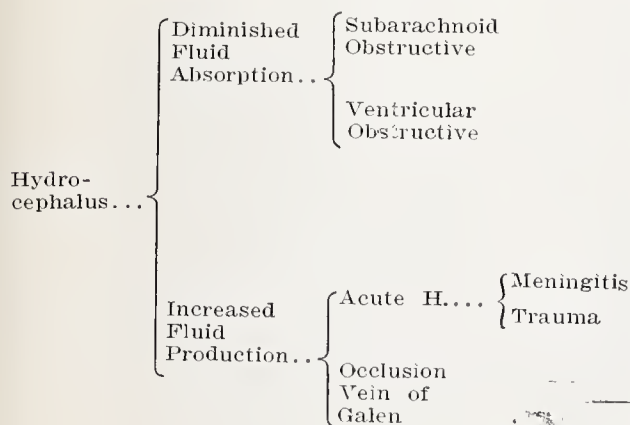
Briefly stated:

The cerebro spinal fluid is produced by the choroid plexuses of the ventricular system and is absorbed in the subarachnoid system over the surface of the brain and cord, and the only communications between these two systems is through the oval central foramen of Majendie and the two lateral slit like foramina of Luschka of the fourth ventricle.

By the term hydrocephalus we mean an abnormal accumulation of cerebrospinal fluid within the cavity of the skull. This condition can have only three possible origins. First, it may be due to excessive production of fluid; second, it may be due to an interference with the absorption of the fluid.

From time to time numerous classifications have been offered, for example, acute and chronic, external and internal, congenital and acquired, and communicative and obstructive. Most of these terms are misleading and confusing. All hydrocephalus is essentially chronic and acute accumulations of fluid associated with meningitis, trauma, etc., should not be confused with true hydrocephalus. Cases of external hydrocephalus rarely occur

and can usually at post mortem be proven to be due to a rupture behind an obstruction, or to be a congenital malformation in the central nervous system through which the fluid escapes and accumulates between the brain and dura. The term "communicating" as used by Dandy, when there is no ventricular obstruction, should also be discarded as confusing. For all practical purposes all hydrocephalus is obstructive, because over production of fluid rarely ever occurs, clinically, though it was experimentally produced by Dandy by occluding the great vein of Galen. The simplest and clearest classification is as follows as suggested by Neuhoff of New York:



His use of the terms "ventricular obstructive" and "subarachnoid obstructive," is descriptive and eliminates much confusion. Since these two types cover practically all cases of true hydrocephalus we can easily eliminate the other rare types and confine our discussion to these.

Etiology.

Obstructive hydrocephalus may be caused by (1) tumors, (2) atresiae, (3) adhesions. Tumors are a very rare cause in childhood, though a frequent one in adults. The location of the tumor is most frequently at the cerebello-pontine angle producing occlusion of the aqueduct of Sylvius. Atresiae and adhesions have a common basis in so far as both varieties have an inflammatory origin, either plastic or infective and they may be responsible for the production of either variety of obstructive hydrocephalus, depending on where the occlusion occurs. Fraser and Dott state that birth hemorrhage was a very common cause of adhesions. In fact, seven cases

of their series gave a history of difficult birth or forceps delivery of the head, and subsequently at operation they found hemorrhagic effusion in the membranes at the base of the brain. In certain of the cases the effusion was definitely blocking the foramina of the roof of the fourth ventricle. These observers also believe that we underestimate the frequency of infective meningeal conditions in early life. A definite proportion of children suffer from inflammatory meningeal condi-



Fig. 1—Hydrocephalus. 9 weeks old, associated with occipital cephalocele. McKinney.

tions which are not necessarily fatal, and some of them so slight as to be overlooked, when shadowed by other more urgent general symptoms, yet enough congestion and effusion exist to produce later occlusion and subsequently hydrocephalus. They report an interesting case in this connection, a child six and one half months old, six weeks before, in contact with a cat suffering with distemper—child became ill, closely resembling distemper, with temperature, coryza, discharge from nose and eyes. Within ten days child had clinically mild meningitis, head retraction, vomiting, eye squint, etc. Recovered completely in a few days. About two weeks later child's head began to enlarge, child died and subsequent examination revealed signs of former basal meningitis with occlusion of ventricular foramina. They believe congenital syphilis to be a common cause by the production of chronic inflammatory

thickening of the basal meninges. They were surprised to find so many of their cases showing positive Wasserman reactions. Fraser and Dott are inclined to agree with Dandy in his argument that the subarchnoid obstructive variety is due to a blocking of the absorption area by adhesions at the base. Closing the cisterns or radicals leading from

them over the brain surface. Dandy experimentally produced this type by passing a roll of iodine gauze around the brain stem, thus producing adhesions closing the large basal cisterns and their radicals.

Briefly the morbid anatomy consists of dilation of the ventricles with atrophy and thinning of brain substance, (see fig. 4) A pecu-

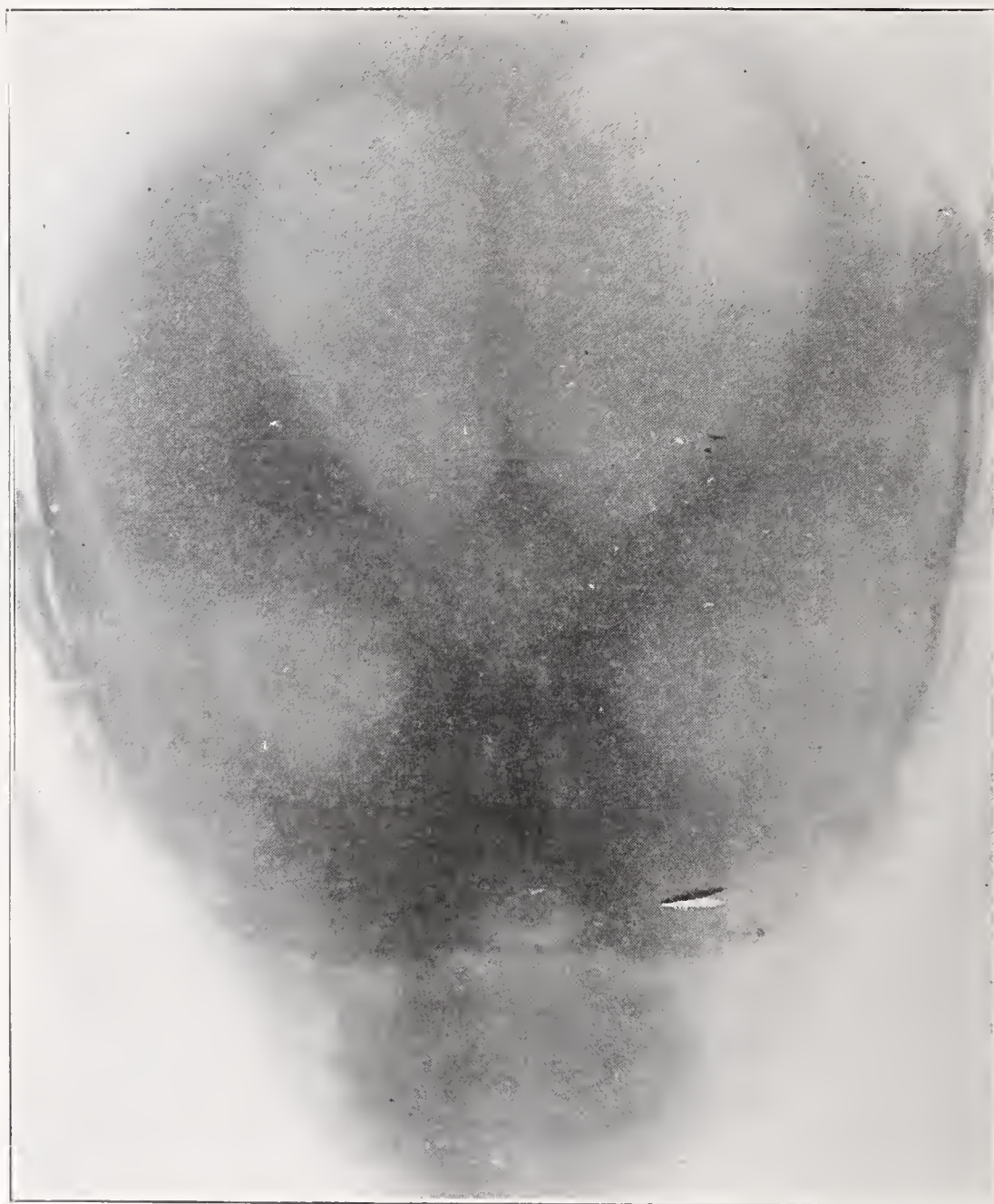


Fig. 2—Ventriculogram, antero-posterior view of case shown in Fig. 1. McClure and McKinney.

liar fact is that the thinning is always at the expense of the white matter. Extreme cases show a practically normal layer of gray matter over the surface.

Clinically the disease occurs with equal frequency in the male and female. Atten-

tion is usually attracted to the condition during the first year, more often second to the fifth month. Occasionally a history of a large head from birth is given, and usually these cases are due to mild inflammatory processes during foetal life. The head at

first increases in size very slowly but later takes on a very rapid enlargement. The axis of the eyes is displaced downward, so that the scleres show plainly. There is often well marked strabismus but rarely ever nystag-

mus. In the later stages there are sluggishness of the pupils and optic atrophy. The children are feeble minded, apathetic and motor disturbances are usually well marked, as spasm, paresis, rigidity and tremors. On

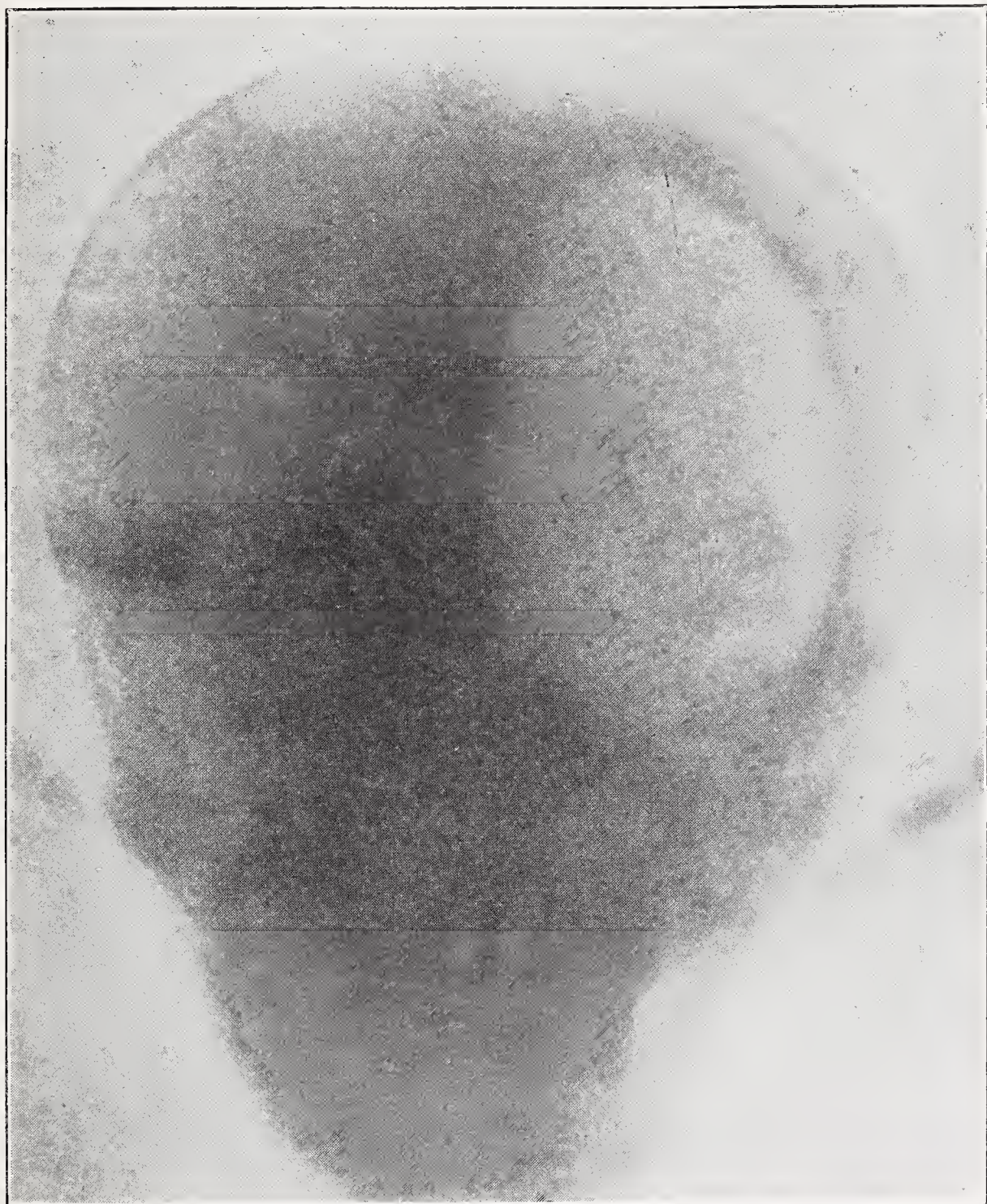


Fig. 3—Ventriculogram case, Fig. 1, in which air is shown in one ventricle only. McClure & McKinney.

account of the weight, the head is usually dropped forward or thrown backward. It is sometimes remarkable, however, how very few general symptoms may exist when hydrocephalus is present in a most marked de-

gree. See figs. 2, 3 and 4. It is interesting to note the frequency of the association of spina bifida and cephalocele with hydrocephalus. (see fig. 1.) These conditions are quite often accompanied by hydrocephalus of

the type which has as its origin a malformation of the nervous system, usually as an absence of the posterior wall of the aqueduct of Sylvius which allows the fluid to escape externally between the brain and skull. Operations are frequently done, closing the more obvious external defect while the hydrocephalus is overlooked until it soon forces attention by the rapid increase in size of the head.

Examination and Diagnosis.

The majority of cases can be easily recognized when they are first presented to the physician, but further examination and accurate classification are necessary before intelligent treatment can be planned. An attempt should be made to answer three questions. First, is there any evidence which would indicate the possible origin of the disease? Second, to what variety does it belong—ventricular, obstructive, or subarchnoid obstructive? Third, if ventricular obstructive at what level does the lesion exist. The answer to question one as to origin must be had if possible from a very careful case history and general physical examination. In obtaining this information bear in mind particularly these possibilities—the occurrence of syphilitic infection, injury to the skull such as might have produced intracranial hemorrhage, and the history of a previous meningeal or encephalic infection. Also the possible existence of a brain tumor.

In an effort to answer question number two, as to type, three procedures are employed. First, lumbar puncture is of some value. Theoretically the ventricular obstructive type should show a low pressure in the spinal fluid and the subarchnoid obstructive cases should show a spinal fluid of high tension. This result, however, is variable and occasionally reversed, so that information by this procedure can be accepted as suggestive and not as absolute. The second procedure consists in the injection of 1 c.c. of neutral phenolsulphonephthalin, into a lateral ventricle followed in from five to thirty minutes by a lumbar puncture. If the phthalin is recovered, it indicates that the obstruction is extraventricular and the type is subarchnoid obstructive. If no phthalein is recovered

it would indicate blocking in the ventricular system or the ventricular obstructive type.

It has been suggested that examination of the urine two hours after the ventricular injection will indicate from forty to sixty per cent recovery of the phthalin, unless the obstruction is in the ventricular system when practically none will be recovered.

Dandy by the injection of air into the spinal theca followed by x-ray examination, demonstrated the exact location of the obstruction in the subarchnoid obstructive type. The air is arrested at the base of the brain and is absent from the cerebral sulci. Though no very serious results have been reported from this procedure it appears to be not entirely free from danger.

If the investigation shows the case to be one of ventricular obstruction, then we must answer question number three, regarding the level of the lesion. This is accomplished by ventriculography, which indicates the location of the ventricular occlusion and also the degree of hydrocephalus present. Figs. 2, 3 and 4 represent ventriculograms made by Dr. C. C. McClure and myself in a case referred to me by Dr. L. J. Caldwell. This case was congenital and associated with cephalocele in the occipital region. Air in the 4th ventricle and the recovery of phthalein proved the case to be of the "subarchnoid obstructive" type. The technique of ventriculography is simple, particularly in children. A needle is inserted through the anterior fontanelle into one of the lateral ventricles, and by means of a two way stop-cock on a twenty c.c. syringe fluid is withdrawn and replaced by air in alternating amounts. Usually seventy to eighty c. c. may be replaced in moderate cases whose head averages eighteen or nineteen inches in circumference. Radiograms are then made with the head in three positions, right and left lateral and with the head hanging downward so that the base is at the highest level. This procedure is said to be practically devoid of risk, and may accurately locate the lesion. A successful examination by these methods will have thrown some light on first, the possible origin, second, the type, and third, the degree of the ventricular type.

Treatment.

Although spontaneous recovery from hydrocephalus does occur presumably from absorption or rupture of adhesions, such outcome, unfortunately is very infrequent, and the great majority of cases progress to a fatal termination. Any treatment no matter how heroic, that offers a logical possibility

of cure or relief, deserves earnest consideration. Nothing can be expected from any medicinal treatment so far known, except in cases where syphilis can be diagnosed. This considerable group are fortunate in that anti-syphilitic treatment, frequently results in a cure of the hydrocephalus.

The treatment of the rarer forms due to

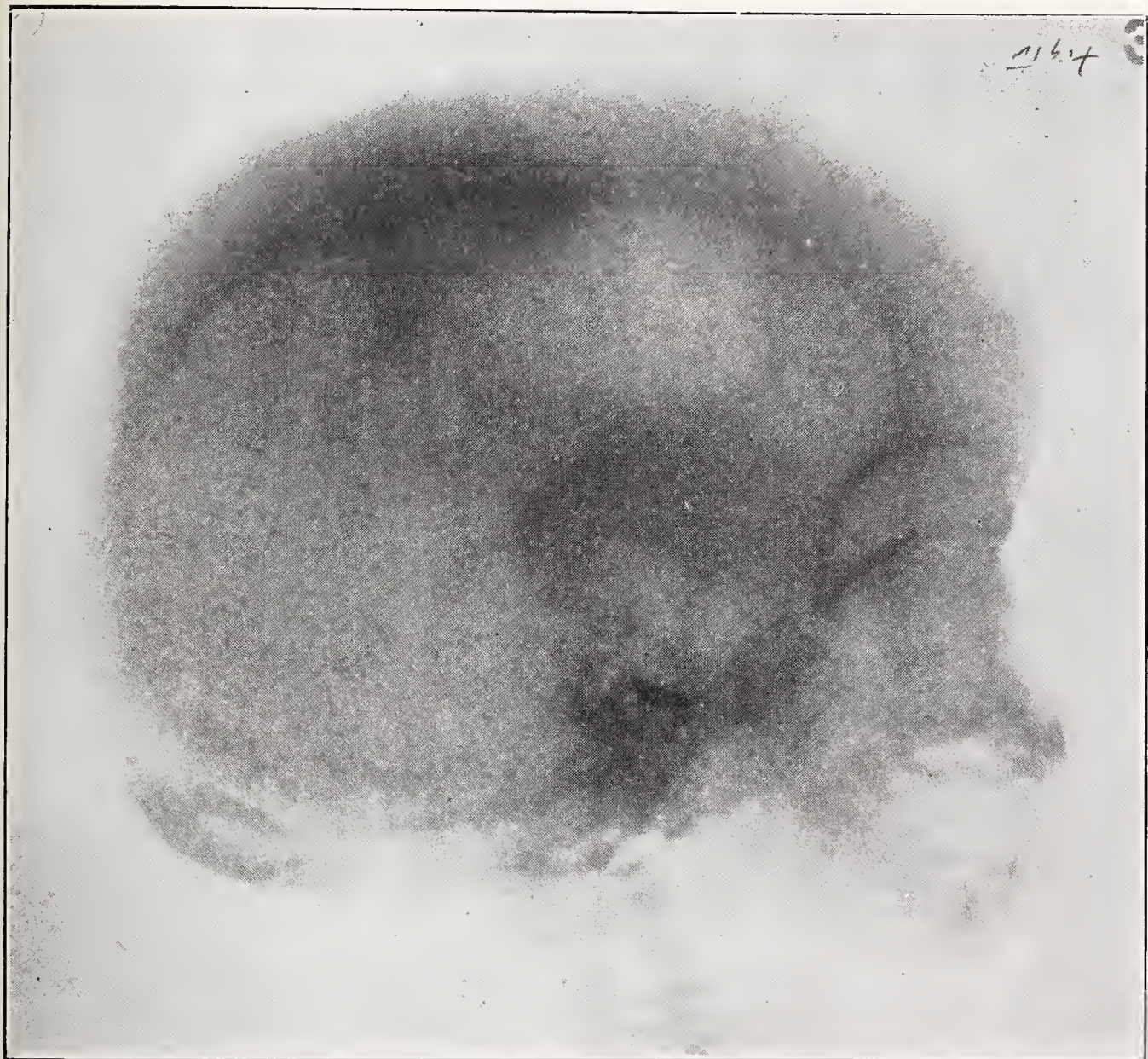


Fig. 4—Ventriculogram, lateral view of case shown in Fig 1. The enormous dilatation seen here illustrates well the amount of destruction which may be present with so little external evidence. McClure & McKinney.

trauma, brain tumors, marked non-obstructive, malformation, etc. will not be discussed here, since each case of these origins forms an individual problem.

The treatment of the two obstructive types

is surgical. How unsuccessful operative treatment in the past has been is indicated by the following tabulated list of procedures which have from time to time been employed or suggested:

1. Intermittent drainage
2. Continuous drainage
- A. Of the lateral ventricle
 1. To the surface
 2. To subcutaneous tissue
 3. Into subdural or subarachnoid spaces
 4. Into the peritoneal cavity
 5. Into the temporal vein
 6. Into the superior longitudinal sinus
- B. Of the spinal canal
 1. To surface
 2. Into retroperitoneal tissues
 3. Into peritoneal cavity
- C. Of the subarachnoid space (fourth ventricle)
- D. Of the cisterna magna into the cranial sinuses.
3. Indirect treatment (carotid ligatures)
4. Other methods of treatment, such as by a seton, injection of iodine, galvanopuncture, compression of head, and by drugs.

The operative treatment of the two obstructive types is essentially different because in the ventricular the obstruction is localized and accessible and in the subarachnoid the obstruction is diffuse and inaccessible.

In the subarachnoid type, Fraser and Dott have employed and now recommend an indirect method of treatment consisting of ligation of the carotid arteries in the neck. Dandy approaches the subarachnoid type from a new angle. In this variety the obstruction being diffuse and inaccessible he proposes to diminish the production of fluid by removing the choroid plexuses of the lateral ventricles. The absorption area in these cases is usually about one fifth the normal, and removal of the choroid plexuses of both lateral ventricles removes about four fifths of the production of fluid. This astounding procedure was the logical outcome of experimental and clinical investigation and Dandy has reported several successful cases operated upon in this manner. He approaches the ventricle by making a bone flap over the parietal eminence, ligates the cortical vessels, incises the brain to the ventricle, ligates the vessels of the plexuses with small silver clips and strips it out, carefully controlling bleeding and tightly closing the wound after filling the cavity with saline.

Fraser and Dott suggested a plan which they have only tried on the cadaver, to be used where the ventriculograms show adhesions around the brain stem and free margin of the tentorium. The skull is entered above the lateral sinus between the mastoid process

and the external occipital protuberance. The occipital lobe elevated and an opening made in the tentorium which allows the fluid to pass upward over the surface of the cerebral hemisphere.

The ventricular variety is approached operatively in a much more direct manner. Fortunately obstruction in the aqueduct of Sylvius or in the foramina of Mejdendie and Luschka in the roof of the fourth ventricle are approached by the same route. Dandy has worked out the principles and technique of operations for obstruction in the ventricular cases. The skull is removed in the suboccipital region, blood sinuses ligated, cerebellum lifted exposing the roof of the fourth ventricle and the foramen of Mejdendie. If this foramen is obstructed, simply an oval opening is made in the roof of the fourth ventricle for the escape of the fluid into the cisterna magna. If the foramina of the fourth ventricle are open it then becomes necessary to incise the roof of the fourth ventricle together with the vermis to expose the lower opening of the aqueduct of Sylvius into which graduated soft catheters are passed relieving the obstruction and dilating the canal. Dandy leaves a rubber tube in the canal from two to three weeks but Fraser and Dott think the fluid pressure is sufficient to keep the channel open permanently. It is important that these wounds be tightly closed so that no leakage can occur.

Dandy has cured a few cases and improved a number by these radical operative procedures. Fraser and Dott had thirteen ventricular cases in their series. Three were too advanced for any operative procedure, five died from the operation, three cases were arrested and two cases appear to be completely cured. They call attention to the fact that the proportion of two out of thirteen cases is exceedingly small but that they are much encouraged that soon they will be able to report much more favorable results.

In conclusion: Much very valuable work both experimental and clinical is being done on this disease and already it seems that the etiological pathology is fairly well understood, so that the empiric methods of treat-

ment used in the past must now be discarded.

While the operative treatment discussed on paper appears extremely heroic and the results so far obtained exceedingly poor, I feel that the principles underlying those procedures are correct and will ultimately be productive of much better results. They now, at least, offer something to our otherwise

hopeless and pitiable group.

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THE DIAGNOSIS AND TREATMENT OF RENAL TUBERCULOSIS*

O. S. McCOWN, M.D., F.A.C.S., MEMPHIS.

THE diagnosis and treatment of tuberculosis of the kidneys have become so nearly standardized that I shall do no more than call attention to, and try to emphasize, the most important practical points.

The first consideration is that, in the beginning, kidney tuberculosis is usually unilateral. This is important because it gives us a rational basis for surgical treatment. There are exceptions to this rule, most notably in cases of general milliary tuberculosis in which both kidneys may share.

Urinary Findings

The diagnosis depends upon the finding of the tubercle bacillus and pus in the catheterized kidney urine. That tubercle bacilli may pass through non-tuberculous kidneys and be demonstrated in the urine is a well established fact, as proven by the reports of Brown, Bernstein, Cunningham, and others. Cabot (1) reports a case from the Massachusetts General Hospital in which the guinea-pig test was positive, but the kidney failed to show tuberculosis. The rarity of this happening may be illustrated by Judd's (2) statement that at the Mayo Clinic tuberculosis of the kidney had been definitely demonstrated in every case in which tubercle bacilli had been found in the urine catheterized from the ureter.

There are other bacteria similar in morphology and staining qualities to the tubercle

bacillus which may be found in urine and may lead to error in diagnosis. The one which is most likely to be present is the smegma bacillus, and both Bransford Lewis (3) and Hugh Cabot (4) say that the two can not be differentiated by staining. This, of course, makes it very important to collect the specimens in the most careful manner to avoid contamination of the specimens from the external genitals where the smegma bacillus is usually present. The lepra bacillus, the timothy hay bacillus, and the milk and butter bacilli are rare but possible sources of confusion, guinea-pig inoculation is especially valuable in the occasional cases in which the tubercle bacillus can not be found in the sediment.

The urine from tuberculous kidneys is pale, acid, usually sterile, and free from offensive odor. Pus and red blood cells are almost constantly present after the disease is sufficiently advanced for diagnosis. Microscopic blood is usually one of the earliest symptoms. Occasionally colon bacillus, staphylococcus, or other mixed infection may be present with tubercle. If colon infection is present, the urine will have the characteristic foul colon odor.

The urine in tuberculosis of the kidney is increased in quantity. In closed unilateral renal tuberculosis the urine may show no abnormalities, though one kidney may be totally destroyed.

*Read before Memphis and Shelby County Medical Society, February 9, 1921.

Symptoms

It must be understood that in all cases of surgical tuberculosis of the kidney, by which I mean those which run a sufficiently chronic course to be benefited or cured by operation, the disease had actually existed for months, or possibly years, before producing symptoms which would cause the patient to consult a doctor, or which would enable the doctor to make a diagnosis.

Loss of weight is not usually an early symptom but does occur later.

The temperature varies from sub-normal in some cases to 100 degrees in others. In mixed infection, especially with ureteral obstruction, the temperature may run high. Usually the pulse rate is moderately increased.

Frequent micturition (the *thamuria* of Tilden Brown), (5) is the symptom which usually brings the patient to the doctor. This is at first painless, only noticeable in day time, and the result of the polyuria. Later there is pain and finally the most intense strangury may occur. This severe bladder pain usually means a secondary tuberculosis of the bladder.

Hematuria is a frequent symptom. It is usually intermittent but may be constant, and may occur at any time in the course of the disease.

Pain in the kidney region is of frequent occurrence, but may be entirely absent. It may vary from a dull ache to an acute colic in cases with obstruction of the ureter from a blood clot or pus. The pain may all be felt on the sound side. I have had one case of true referred pain.

Physical Examination

A careful general physical examination should be made. The diseased or the sound kidney or both may be enlarged and tender. It is common for the sound kidney to undergo a compensatory hypertrophy as the diseased kidney is destroyed. This increase in size causes tension on the capsule and accounts for the pain and tenderness in the sound kidney.

Cystoscopy

Cystoscopy, with ureteral catheterization, is absolutely essential to the study of any surgical kidney case. Some of the things learned by cystoscopy in renal tuberculosis

have been discussed under the head of urinary findings. The bladder pathology may vary from normal to the most extensive bladder tuberculosis, and the cystoscopic appearance will vary accordingly. The bladder wall may be deformed by scar formation or by extensive deposits of tuberculous material. The bladder capacity may be greatly diminished in the same way, or the bladder may be so irritable that it will not retain the dilating fluid. Pus or blood-mixed urine may be seen coming from the ureter on the diseased side, while clear urine may come from the opposite side. In case of a closed tuberculosis of the kidney, the fact that no urine comes from that side, especially if accompanied by a palpable tumor in the kidney region of the same side, would be strong suggestive evidence. A free flow of urine from one ureter with a palpable tumor in the kidney region of the same side and no urine from the other side would probably mean a compensatory hypertrophy of the kidney from which the urine came, with a dead kidney, possible from closed tuberculosis on the opposite side.

The phenol-phthalein test with the catheters in the ureters should be made. The output from the tuberculous kidney is delayed in time of appearance, and diminished in quantity, though there may be a polyuria. Retraction of the ureteral orifice is due to shortening of the ureter from scar formation and is common in very chronic tuberculosis. The ureter is sometimes so strictured by dense scar tissue that it is impossible to introduce a catheter.

X-ray

The x-ray will often show a calcified tubercle which may be mistaken for a calculus. The x-ray may also give information as to the size, shape and location of the kidney. No surgical kidney diagnosis is complete without x-ray study. It is superfluous to state that this should include both kidneys, both ureters, and the bladder.

Remember, above everything else, that the bladder is rarely the site of a primary infection of any kind including tuberculosis, and that tuberculosis of the bladder is always secondary to tuberculosis of the kidney or of the lower genitals. In the male the epididymis, prostate and vesicles should be carefully ex-

amined, even though a proven kidney tuberculosis may be present.

Treatment

The treatment is both hygienic and surgical. The hygienic treatment is the same as that for pulmonary or other tuberculosis, namely, rest in bed in febrile cases, abundant food, and fresh air and sunshine. I have treated three cases after operation by exposure to direct sunlight. All were advanced cases and one was bilateral with extensive bladder tuberculosis and terrible suffering. The results were very gratifying and I believe this measure may be utilized to great advantage in the after treatment of unfavorable cases.

The surgical treatment is nephrectomy. The contraindications are those of any major surgical operation. Active pulmonary tuberculosis may be present and is a contraindication, but a quiescent pulmonary focus is not. Toxic albuminuria from the opposite kidney is not a contraindication unless the phenolphthalein output is materially diminished. Bilateral renal tuberculosis is usually a contraindication, but there are exceptions. If one kidney is practically destroyed and the other slightly diseased, the patient may be made more comfortable by removal of the worse kidney. This is especially true if the patient is suffering from severe tuberculosis of the bladder. There is hardly any suffering more intense than that experienced by these patients. The bilateral case mentioned above was one of this kind and the relief from pain following nephrectomy was prompt and complete. The patient lived in comfort and was able to do housework for four and a half years after the operation but finally died five years after of the disease in the remaining kidney. There was never any return of the bladder symptoms.

In any proposed nephrectomy a thorough study of the opposite kidney is an absolute requisite. The administration of a glass of hot water every four hours for two or three days before operation is the best preparation.

I have always used the posterior oblique incision beginning behind at the twelfth rib and going forward toward and above the iliac crest. The twelfth rib may be removed to advantage in many cases.

The pleura sometimes comes down below the twelfth rib and care must be taken to avoid it. The twelfth dorsal and ilio-inguinal nerves must be found and pushed aside. The fatty capsule is opened with scissors or the finger, the kidney found and freed from its attachments down to the pedicle and brought into the wound. The vessels which lie above the ureter should be ligated with double No. 2 or No. 3 chromic gut and cut close to the kidney. The ureter is then doubly clamped and cut between the clamps, the ends canterized with carbolic acid followed by alcohol.

It may be easier in some cases to reverse this order by securing and cutting the ureter first and then the vessels of the pedicle. If the pedicle is short, it may be clamped and cut and ligated after the kidney is gotten out of the way; or it may even be necessary to leave the clamps on instead of ligating. Dr. Oschner (6) describes this as the method of choice. I have only done this once and had no trouble, but I feel much better after a good ligature is applied.

The treatment of the ureter is much discussed. Lillienthal (7) and others (7) advocate its complete removal. Mayo (8) recommends suturing it to the skin. Cabot (9) recommends the removal of as much as can be gotten without enlarging the incision. He says that the portion of the ureter joining the bladder is one of the most frequent parts affected, and that the diseased area can not all be removed without taking a section of the bladder wall and that this should not be done. The results have not been as good in the cases in which he has removed the ureter down to the bladder as in those in which it was treated conservatively.

In the few cases I have had, I have simply ligated the ureter, canterized, and dropped it back with satisfactory results. I have been converted from the use of drainage even though many of the wounds will open to some extent.

Results

The results are good where the cases are studied and selected carefully, and prepared properly for operation. After recovery from operation they gain weight and strength, and the rapid recovery of the bladder tuberculosis

and relief from the intense suffering which it causes is sometimes almost marvelous.

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SPLINTING—ITS PRINCIPLES AND RELATION TO FUNCTION.

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THE principles as well as the technic of splinting seem not to be well understood nor their importance appreciated by many who undertake treatment of injuries and diseases of the spine and extremities. That all should become expert in such a technical subject is hardly to be expected but they should at least understand the more important general principles and the possibilities for improving results by more expert designing and application of mechanical appliances in such conditions.

It is not enough to know that a Thomas or Hodgen splint is used for a fractured femur, that a plaster jacket should be applied to a diseased or fractured spine, or that a cock-up splint is indicated for wrist drop. One should first understand the pathology present, its dangers to health, form and function and the principles underlying preservation or restoration of these; what attitudes of the parts must be gotten and maintained during the period of healing in order to insure the earliest as well as the most complete restoration of function; whether partial or complete immobilization is necessary and for how long; what available material and type of appliance will best meet all the special requirements of the case in hand. He must then have the necessary appliance and apply same so that it actually accomplishes the phy-

sical effect desired without undue discomfort or other ill effects.

Operations often fail of complete success for lack of proper splinting of the parts subsequently. Moreover, many operations on fractures could be avoided by skillful use of mechanical appliances. I have often seen patients wearing plaster jackets which did not extend above the level of the disease in the spine far enough to give any efficient protection; a Hodgen splint on a fractured femur where proper traction and alignment were not being maintained; a cock-up splint on a wounded wrist joint wherein the retaining bandage had allowed the splint to slip distally until only the fingers were in extension, with the thumb usually pushed back to a useless attitude; an injured or diseased ankle with the foot fixed in plantar flexion or an injured finger joint on a straight wooden tongue depressor. These and similar errors in principle and technic are often committed by reputable surgeons. Oftentimes such inefficiency is not so much due to ignorance as to carelessness and lack of industry sufficient to obtain or make a proper splint or apply a plaster cast. Too often any old splint which happens to be lying about the office or hospital is used when it should be evident from the beginning that it will not fulfill all of the requirements of the case.

One must think not only of anatomical

reposition of a broken bone or of fixation of a diseased or injured joint but must know in what attitude, or relative position of parts adjacent, this reposition or fixation can best be maintained in order both to hasten the healing process and contribute most to restoration of function of the limb as a whole. It is not uncommon to see a good union of a fracture with a neighboring joint temporarily or permanently stiffened in such a position as greatly to increase or prolong the disability beyond what it would have been had the joint been immobilized in the proper attitude during healing. A less perfect union of the fracture with a better position of the joint may have given a functional result much to be preferred. Where, in order to maintain reduction of a fracture, it is found necessary to splint a joint in other than the attitude of election, this joint should be moved just as soon as consistent with safety to the fracture, and if the fracture is near the joint, with a probability of more or less permanent stiffness resulting, then a compromise should be made in favor of the joint.

Splinting in paralytic conditions has for its objects the protection of the weaker muscles against overstretching, prevention of development of contractures and deformities, and artificial support of a weak limb to aid walking or other functions. This is a large special field in itself.

The attitude of election for each of the joints is of extreme importance as to function and must be kept in mind from the beginning of treatment of affections of the extremities and spine. It means the angle or relative position of the parts which will result in the least possible disability in the event stiffness of the joint results. If only partial stiffness or limited motion remain, then the arc of movement should be that which is most useful. If only temporary stiffness is expected then a position of partial flexion of the joint will usually allow the most rapid mobilization after the splint is removed since motion can be developed much faster in both directions than in only one direction. Thus it may be seen that splinting is a most important factor in relation to function. This and other practical points will be discussed as applied to each of the joints.

Hip Joint.

The best position for a stiff hip is 15 to 30 degrees flexion and 10 to 15 degrees abduction. The amount of abduction desired will depend on whether there is shortening. Fixed abduction causes a downward tilting of the pelvis on the affected side and one may in this way compensate for as much as one or even two inches of shortening without serious strain on the lumbar spine. In fractures of the neck or upper third of the femur, without damage to joint surfaces or soft parts liable to cause ankylosis, the position of choice is abduction, whether Whitman's method or a Thomas or Jones or Hodgen splint is used.

As a rule, the best means of immobilizing a hip is a plaster of paris spica, and a long spica gives more complete fixation than a short one. The latter, coming down only to the knee, permits rotation in the hip joint as does one extending to the ankle unless the knee is flexed slightly to prevent it. In children under three years of age plaster is not practicable as it would soon become saturated with urine. In these little fellows a properly fitted Thomas hip-splint (not the Thomas knee-splint) is satisfactory in most cases of tuberculous and other arthritis. The Jones abduction hip-frame also affords traction and maintains abduction and is very useful while recumbency is imperative. A plaster spica permits the use of traction by weight and pulley and serves as either a recumbent or ambulatory splint.

Where fixation of the joint is not required and one wishes to relieve the joint of weight, as in old united fractures of the neck before or after operation, the Thomas walking caliper is a most useful splint. This or the Bradford modification will also maintain abduction if properly fitted. It should be remembered that in any painful condition or sensitiveness to motion in the hip joint there is a strong and persistent tendency to adduction deformity until motion or attempted motion becomes entirely painless. It is a fact not always appreciated until too late that adduction deformity is a very crippling complication. Its prevention by proper splinting is usually easy if begun early; its later correction may

require an osteotomy of the femur and is always a tedious if not a serious undertaking.

Knee Joint.

The most useful position for a stiff knee is between 180 and 150 degrees, depending on the occupation of the patient. It is comparatively easy to immobilize a knee due to the fact that the thigh and leg on either side of it are two long levers easily grasped and held by an appliance. A plaster cast or other splint may be used and is more comfortable and efficient if it extends well up to the groin or even the pelvis and down to near the ankle. I often see knee casts not more than 12 or 15 inches long on adults. Such do not give anything like complete fixation and are not nearly so comfortable as if the whole thigh and leg were included.

The position in which the knee should be held depends also on the condition present, whether temporary or permanent, partial or complete stiffness is anticipated. It is usually easier to mobilize a stiff knee in the direction of flexion than of extension; also the tendency to deformity is toward flexion and with marked flexion deformity there often develops a troublesome posterior subluxation of the tibia on the femur. Here again it is much easier to prevent deformity by proper splinting than to correct it.

Where traction or relief from weight bearing is desired together with immobilization the Thomas knee splint is best. A plaster cast, a moulded plaster or posterior gutter splint of tin will be found satisfactory for simple immobilization. Several special splints for gradually extending or flexing stiff knees or elbows have been devised, notably that of Turner. I have devised a most satisfactory device of plaster of paris for producing flexion. This consists of separate sections of plaster on the thigh and leg joined by simple sheet iron hinges to allow motion, the gradual flexing force being obtained by a strap and buckle connecting the upper and lower extremities on the flexor aspect. One of the simplest and best means of getting gradual extension of the knee is by a cast cut behind the knee and wedged apart. Similar splints and devices work well on elbows.

Ankle.

If this is in danger of becoming stiff it should usually be splinted with sole or foot at right angle to the leg. If the affected limb is short, however, some plantar flexion may be desired so as to allow for an elevated heel. Prolonged equinus or drop foot attitude, even without injury or disease of ankle or leg, is liable to result in troublesome contraction of calf muscles and is easily prevented by a dropfoot splint. If subtrigaloid or mid-tarsal joints are involved one should take care to prevent a fixed varus or valgus attitude of the foot. Plaster, Cabot's, Osgood's and Jones' splints are efficient in such cases, choice depending on whether there is an open wound and other circumstances.

Toes.

Little attention is usually given to the position of the toes, though this may be very important in preventing pain and disability. A rigid great toe in the straight position or flexed is very disabling, whereas, if in thirty degrees extension, even though stiff, it will cause comparatively little trouble. Hammer toes and contracted toes may result from injury or prolonged infections about the foot if allowed to remain for long in the equinus position. A drop foot splint properly supporting the toes, a plaster cast or individual toe splints of tin will prevent such troubles.

Spine.

In most injuries and diseases of the spine the tendency is to develop flexion deformity. Therefore, one of the important objects of most spinal appliances is to prevent this by maintaining more or less hyperextension. Scoliosis is the chief exception to this rule. The Abbott treatment of scoliosis purposely flexed the spine on the theory that it rendered correction of lateral curves easier. Many good authorities now question the wisdom of this, however.

It was formerly taught that certain appliances could actually lift the superincumbent weight from a diseased vertebra and so maintain it in the ambulatory upright posture. Every orthopaedic surgeon today knows this is practically impossible. If this object is to be accomplished the patient is either put in recumbency or a cast or brace is applied

which will maintain hyperextension and thus relieve the pressure by separating the bodies of the vertebrae, using the vertebral arches as the fulcrum.

No other part of the body requires as much judgment and skill for effective splinting as the spine. A jacket or brace which will effectually splint a diseased or crushed lumbar vertebra will be useless for a similar condition in the mid-dorsal region, in which case only recumbency on a Whitman-Bradford frame or plaster shell will be efficient in relieving pressure and preventing development of deformity. A Calot jacket or jury mast will do this partially, not completely, if the patient is erect.

Plaster and celluloid jackets, braces and splints of many kinds all have their place in treating spines, but their proper selection and application often test the skill of the most experienced.

Shoulder.

The best position in which to splint an injured or diseased shoulder joint is with the arm in forty-five degrees adduction from the body, thirty degrees anterior to the transverse diameter of the chest, and external rotation a little beyond midway. If normal movement of the scapula is liable to be seriously limited less abduction should be maintained. Rotation of the humerus inward should be avoided by flexing the elbow and keeping the forearm horizontal. The Mitteldorff triangle is defective in this respect as it maintains the humerus in internal rotation.

Several useful shoulder abduction or so-called aeroplane splints have been devised recently. I think I have tried about all of them. The simplest and most satisfactory is the one which I designed during my army service and described in detail in the April, 1922, issue of the *Journal of the Tennessee State Medical Association*.

Elbow.

The most useful angle for a stiff elbow is from seventy degrees to one hundred and twenty degrees depending on the patient's occupation, the plane of the hand and arm being the same, i. e., the forearm midway between pronation and supination. A laboring man requires more extension than a desk

worker. It is generally considered best to treat all fractures about the elbow, except of the olecranon, in Jones' position of acute flexion. However, the forearm is gradually let down after union begins to take place so as to prevent too much limitation of extension. Unlike the knee and hip, the elbow, when not splinted or carried in a sling, tends to straighten out instead of flex, due to the effect of gravity. But like the knee the motion takes place between two long levers which are easily controlled by splints.

Wrist.

The position of choice here is that of forty-five degrees hyperextension. The teachings of Sir Robert Jones and the use of the cock-up splint are now familiar to most of us. Yet one frequently sees stiff wrists in the straight or flexed attitude due to lack of proper early splinting. The usual tendency to deformity is toward flexion, which may develop early and be difficult to correct. The strength and function of the hand are greatly diminished unless hyperextension of the wrist is maintained. In Colles' fracture we have an exception to this rule as this position may cause displacement of reduced fragments. But flexion of the wrist is not necessary and will delay convalescence. The straight position is, therefore, the correct one for a Colles. In any condition where the wrist is liable to be more or less stiff hyperextension should be religiously maintained until healing is established.

Various forms of "cock-up" splints are in use, many of them more or less defective in design. In all of them special care is required to prevent the splint slipping distally, losing the effect on the wrist and hyperextending the fingers. I have often seen this result in a very troublesome stiffness of fingers in this attitude. It should take the pressure in the palm of the hand and not distort the thumb and fingers, as mentioned below.

Thumb.

The thumb should be splinted in the grasping attitude, never flattened out in the plane of the hand on a flat splint such as many of the broad, flat hand and cock-up splints on the market and even pictured in text-books.

My own special cock-up splint or moulded plaster will properly hold this position.

Fingers.

These are often splinted in the straight or extended position resulting in a worse than useless stiff straight finger. They should be held slightly flexed at all joints, as a rule, to allow approximation with the thumb, and to make the grasping of objects much easier. A stiff finger in the fully extended position is not only useless and unpleasantly conspicuous, but is constantly getting in the way when using the other fingers. Splinting fingers in full extension with a wooden tongue depressor or other straight splint is a very common and pernicious practice. Even though temporary stiffness does not result from the injury, the temporary stiffness will be much more easily and quickly overcome after the splint is removed if manipulation and movements can be started from the semiflexed positions, thus allowing motion to be developed in both directions. This same principle applies also to mobilization of other temporarily stiffened joints.

Simple and satisfactory finger splints are easily made from tin, cutting them to proper shape with tin shears and bending to the desired angle at each joint, as previously mentioned.

In the use of mechanical appliances, as in all surgery of the spine and extremities, there are three main objects to be attained: (1) Rest of the part during healing of diseased or injured tissues; (2) Correction or prevention of deformity; and (3) restoration of the greatest possible degree of function in the shortest possible time. The last as well as the first and second should always receive due consideration from the very beginning of treatment.

As a rule, the design of a splint should be as simple as possible to meet the special needs of the case which must be analyzed carefully before a choice is made. Every appliance, if it accomplishes anything at all, must exert more or less pressure over certain areas and in certain directions. The pressure should be distributed evenly over as large an area as available, with proper arrangement of padding of felt, sheet-wadding, etc., in order to insure comfort and prevent pressure sores. This applies to plaster casts, as well as to metal or other splints.

Very few manufactured splints are needed if the surgeon will only use a little energy and ingenuity in making what is required. Plaster of paris meets many indications in the hands of those trained in its use and having first-class materials, but the man who rarely applies a cast and buys stock plaster bandages never makes a really good cast or moulded plaster splint. With some galvanized iron and a pair of tin shears one can easily make gutter splints for arms, legs, elbows and knees, also cock-up and finger splints and many others. With heavy wire or 1-4 inch round iron and a few tools, he can make a Cabot leg splint, Osgood drop-foot splint, Jones' humerus traction splint and even a Hodgen or Thomas splint. Many other special needs can also be met. Felt, sheet-wadding, bandages, adhesive, webbing straps and buckles furnish the necessary padding and means of retaining most of these. Let the splint be made to fit the patient and do not try to fit the patient to the splint.

In conclusion, I would again emphasize the need for a better understanding of the principles and more painstaking care in the practice of splinting. The average proficiency in this work is far below the standards of medical and surgical practice in most other lines.

PELLAGRA*

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THE date of the first discovery of pellagra is unknown. It seems to be, naturally, a disease of a settled, agricultural people in a well-worn agricultural country.

In 1771 Frapoli of Milan published his account, and gave it the name Pellagra. The principal interest seems to have centered in Italy, in fact, according to Alessandrini, Italy was the one country in all Europe, destined by fixed character of population, age of agriculture and geology to be afflicted by pellagra.

According to the theory of Alessandrini, pellagra is the effect of a chronic intoxication, which is caused by silica in colloidal solution in water of a determinate composition, and therefore may be defined as a disease caused by colloidal mineral. The clay is the prime cause of the sickness, whether it is rain water from the superficial strata of the earth, or from the deep strata. The reagent is the same, which is a silicate of aluminum; one produced by hydrolysis, giving that form of silicic acid and aluminum hydrate, which through the conditions, such as obtain in this hydrolysis, are both able to pass into the water in the colloidal form. Since there is an incompatibility between silica and colloidal alumina, the colloidal alumina is precipitated, therefore, there remains in the water only the excess of silica above the amount necessary for the precipitation of the alumina, and the compound silica-alumina not at all to be confounded with silicate of aluminum forms a deposit, and remains in part in a very fine colloidal suspension, which is the cause of the persistent opalescence which is frequently observed in some of the water drunk by the pellagrions.

Veterinary science has for several years recognized the fact that animals are sub-

jects of pellagra, horses, cattle, dogs, cats, rabbits, monkeys, guinea pigs. The course of the disease is slower and symptoms are less pronounced in animals, in a majority of cases, than in man.

Alessandrini has experimentally produced the symptomatology of pellagra in rabbits, guinea pigs, dogs and monkeys:

First, by feeding water of a pellagrions zone mixed with a small quantity of food.

Second, silica in colloidal solution, and gelatinous silica; the one given by intraperitoneal and subcutaneous injections; the other by the mouth.

After a variable period of time, it is observed that the animal becomes apathetic; the hair loses its luster, and falls in abundance from a proportionate scab; appetite diminished; intestinal disturbances supervene; diarrhoea, sometimes slightly bloody, alternating with costiveness. The nervous disturbances were marked, ending frequently in spastic, paraparetic walk; erythema becomes pronounced; dense epidermic desquamation, followed by ulceration; tongue becomes dry; stomach and intestines found hyperemic and very thin walls. There were no single symptoms wanting to constitute the classical picture of pellagra.

After making the experiment on the animals of action of colloidal silica in distilled water, Alessandrini made an experiment on the action of the silica united with calcium carbonate and sodium, each dissolved in carbonic acid, and sodium chloride and calcium chloride, gelatinous alumina. These substances were each united with a solution of silica. They were injected separately but contemporaneously. The results of this experiment were that the chloride of calcium and gelatinous alumina—aggravated the action of the silica, chloride of sodium—did not retard the action, but carbonate of sodium and carbonate of calcium absolutely neutral-

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ized the action of the silica, so much so that animals injected with the silica and the carbonate at the same time, not only did not present any symptoms of the disease or sickness in life, but killed after long periods of injection did not show any changes that are so characteristic of the disease already described.

The first attempt at cure was made upon one of the dogs which had served for the study of the urine under the action of colloidal silica, and, therefore, to avoid the improvement from the effects of the suspension of the injection of colloidal silica alone, these injections of colloidal silica were continued and at the same time there was injected daily 1 c.c. of 5 per cent solution of sodium citrate. The animals so treated recovered and the composition of the urine returned to the normal. After eight injections the animal was cured of the sickness caused by the silica. Encouraged by this result, it was decided to apply the same treatment to the human pellagrins. Quite a number of classical pellagrins were treated for a variable time with sodium citrate injections; in each case without a special change of environment or of diet; the patients universally improved and to all appearances recovered. These cases were prevented from relapse by continuing the sodium citrate by the mouth, or else by adding calcium carbonate to the fluids taken. The pathogenesis of the intoxication of silica being known, it is easy to deduce the treatment, because a mineral acidosis could have no remedy but an alkali.

It has been observed by critics of this theory that silica has been found in all potable water in greater or less quantity and insist that this should not be the cause of pellagra for if it were the whole world would be afflicted by this disease. The answer is that all water is not pellagrogenic although it contains silica, as not all water containing oxygen dissolves lead, although the contained oxygen is the essential cause of the solution of this metal. For this reason there is found but one colloidal substance in the water; on the other hand there is one colloidal substance which ought to pass through the water; the oxyhydrate of lead. Both sub-

stances are able to be influenced by certain neutral salts and mixtures of certain neutral salts in the water; these salts in the case of the lead arrest or favor the solution of the lead impending or favoring the passage through the water of the oxyhydrate coming from the same solution.

In the case of the silica they inhibit or simply attenuate or else they increase the injurious action of the silica, and the salts above all that produce the beneficial modification in our water are the alkaline carbonates in general and the carbonate of calcium in particular which exists and may exist in potable water either alone or united to others in different proportion.

The study of pellagra is inseparable from the study of colloids. All of the tissues of the animal and vegetable kingdom are colloids. In vital, normal functioning organic structure, nature does not tolerate crystallization. All of the combination of digestions, assimilations are colloidal combinations; they are never the quick, violent combinations of the chemical laboratory. Tissue and function could not tolerate such action.

Colloids are substances which do not crystallize, and may be of all consistency, from that of a watery solution to the hard glass of the window-pane.

At the initiation of animal and vegetable life, the colloids of the tissues are at their maximum variable dispersion. As life progresses, water is slowly but progressively lost, until finally death supervenes.

The equilibrium of the human body is an alkalinity of 85 one-hundredths of one per cent of sodium chloride. Conditions of acidosis are conducive to ulceration, degeneration and anemia.

When colloidal silica is taken into the human system in drinking water, it is absorbed and enters into combination with the protein substance of the tissue cells. It does not stop there; it acts much like an enzyme, that is, the combination is only a step of uniting, of fixing salts in the tissue cells. When the tissue cells have combined with the silica, they are then in condition to make a new combination with the salts and alkalies. This combination is made; the salts are fixed in the cells and

the silica is again set free; the silica again goes through the cycle of attaching to proteid substances and fixing salts in the cells. So with continued injection of silica and setting free of silica already in the body to go through the cycle again, it can be seen that the action of silica is cumulative. Now, every time silica is able to attach a salt to a cell it frees water and also the acid which formed it and since hydrochloric acid is the most common acid in the combination of the salts of the body, it is the acid most commonly set free by the action of the silica. The abstraction of water results in the drying of the tissues, so marked in this disease. The freeing of acid is the cause of the acid taste and the burnings in various parts of the body, both internal and external, and all of the skin manifestations.

The toxicology of silica itself, has been known for over seventy-five years. The continual injection of silica produces a syndrome which is none other than that of pellagra.

In a disease of the nature of pellagra, there should be an analogy between its distribution in foreign countries and America. It will be noted that pellagra is found almost entirely in foreign countries, as well as in America, in localities where there is a soft or acid water supply and the disease is less prevalent or absent is alkaline or hard water areas. It is notable that in the great prairie belts of the West, which is entirely alkaline, there is no pellagra.

The greatest concentration of pellagra in our state is in West Tennessee, where it will be noted we have acid, soft water, as a rule, and incidentally it might be mentioned, it is also the region of Tennessee's greatest clay industries.

Pellagra is essentially a disease of a fixed agricultural population living on a soil of determinate geological origin, where the surface alkaline soil has, to greater or less extent, disappeared because of cultivation, washing or leaching of soil.

Pellagra is endemic in Spain, Portugal, Italy, the Tyrol, Roumania, and Bessarabia. It is confined to those areas where the soils are clay, derived from erosion and weathering of the igneous and crystalline rocks, giving

the acid or soft water supply. It is no violation of scientific candor to assume an identical disease would have a similar cause in America.

A study of geology of the endemic area in the United States is convincing. The area of our Southern States marked by the predominance of clay derived from the igneous and crystalline rock, is highly pellagrous. The limestone regions are practically immune. The only cases seen in limestone regions are either migrating from some pellagra region or else drinking water from an area that has hard water because of the calcium sulphate or calcium chloride that it contains and not carbonate of calcium.

Thousands of analyses of soil have been made in immune and pellagrous areas. It has been proven that where the calcium in the soil is below $\frac{1}{2}$ per cent, the region is pellagrous and where calcium in the soil is between $\frac{1}{2}$ and 1 per cent there may be some pellagra. Where calcium in the soil exceeds 1 per cent there is no pellagra. In the pellagrous areas, the surface waters of the streams and rivers contain from 18 to 26 parts per million of silica and from 5 to 13 parts of calcium. In the partially pellagrous area, the silica and calcium are about equal. In immune areas, the silica is about the same, but the calcium bicarbonate attains 150 to 200 parts per million.

All of this work has been done by the United States Geological Surveys and Bureau of Soils. It has been published for gratuitous distribution and is available to all research workers.

It so happens that a portion of my territory is supplied by soft water, or in other words, acid water, because of the absence of lime; this territory referred to is what is generally known as the Highland rim or barrens or flat woods, with which most of you are familiar. Now, this barren territory is and has been notoriously infected with pellagra for fifteen or twenty years, while the limestone area just below, was and is comparatively free from the disease. This condition of things had been the occasion for much thought and study on my part as to why this territory referred to should show

such a large number of cases of pellagra as compared to the limestone area below, where we do the larger portion of our practice.

By careful inspection, observation and comparison in both areas, we found striking parallelisms and similarities, first in environments, second in sanitation and third in diet. We found the tenant in both sections, having practically same diet, same sanitation, same environments. We found landlords in each section living practically on same diet and having sanitation and environments the same.

Now, why was it that the tenant and the landowner of one area were subjects of pellagra, as 30 to 1 against the land owner and tenant in the limestone area below, in some instances not over one to two miles distant from each other?

This theory of pellagra would seem to give a reasonable and satisfying explanation as to the greater prevalence of this disease in the sort of water area just referred to as compared to the contiguous central limestone basin.

Another further apparent corroboration of this theory is the fact that the rate of the great increase in the number of cases of pellagra in this highland rim or barren section in the last fifteen years has been exactly measured by the rate of the rapid clearing of the land of its timbers, followed by cultivation and consequent washing and leaching of the soil of its thin alkaline coating, which coating was produced by years of accumulation of vegetation and humus decomposition, forming a thin coating of lime.

The original surface alkalinity being the neutralization agent for the toxic action of the contained silica.

The above apparent explanation of the cause of the increase of Pellagra in this minute section that I refer to applies, it seems to me, to America and the world at large, as a possible explanation of absence of the disease when our country was new with its virgin surface alkaline soil, and as civilization progressed, and the country was cultivated and leached of its alkaline contents, then the silica had no neutralizing agent to combat its slow but sure chronic intoxication.

The prevention then of pellagra consists in providing a drinking water of the proper alkalinity. The alkaline carbonates are the carbonates of sodium and potassium. The carbonates of the alkaline earths are, the carbonates of calcium and magnesium. When limestone is in solution, it makes the water hard: this is what is termed temporary hardness; this makes the scales on the inside of cooking vessels.

So, referring more especially to preventive measures; all water supply from springs of a suspected nature should be enlarged and walled up above surface, and also floored with lime rock cemented together, and a liberal deposit of ground limestone on bottom.

The surface water from rains is shut out in this way, which is important for any mudding or stirring up of bottom of spring or wells renders content of colloidal silica more abundant and toxic.

It should be noted and borne in mind that other hard waters have a permanent hardness, caused by the presence, not of lime, but of chloride of calcium and sulphates of calcium, which only makes pellagrous water worse, as they furnish the hydrochloric and sulphuric acid, increasing this acid intoxication.

The carbon dioxide liberated from the carbonates by a similar action of the silica is easily eliminated, and therefore comparatively harmless.

In most of cases treated in the last four years I have supplied to my patients an alkaline water by the addition to the drinking water of carbonate of calcium, and where practical have rendered the source of the water alkaline by the addition of crushed limestone.

We treat these patients with 5 to 10 per cent daily injection of sodium citrate for two or three weeks, then two or three times per week for eight to twelve weeks. In this connection, it is worthy of note to call attention to the author's statement and comment, "That the real good the profession had derived from the use of cacodylate of sodium in this disease was in a measure from the contained sodium content, and not from specific action from the arsenic therein."

Lastly, referring to the various theories of pellagra—Perdue suggests that a certain review of the literature of the past few years is very suggestive of the fact that the biochemists, as well as many others, have been led into error in classifying Pellagra with the deficiency diseases. This is such an important matter, in view of the prevalence and mortality of Pellagra, its ready prevention and cure, that it should not pass without attention. He says there are several reasons why biochemists and others have been deceived and led into error. First—The various theories based upon the general maize diet theory has enjoyed wide acceptance, largely through the commanding genius of Lombroso. Second—From 1910-1914 the preliminary notes and monographs of Alessandrini and Scala of the Institute of Experimental Hygiene of University of Rome had seriously attacked the maize and diet theories and had finally overthrown them. Third—Certain large, powerful and influential institutions and agencies under what the famous Reed has so aptly termed a "Policy of Concerted and Cumulative Negation," had initiated a series of counter researches whose end and purpose was to discredit the proof and findings of Alessandrini and Scala. Fourth—He further states that the negative finding of these researches, previously agreed upon, were published in certain well known and "authoritative" medical and scientific journals and in the Reports of United States Public Health Service. This last especially enjoys the prestige and frank of the Government. Fifth—The biochemists who were not doing special research work in pellagra, took these reports in good faith and interpreted them at their face value. Sixth—Many others, for the same reasons, have been deceived and have written of pellagra as a disease caused by a faulty and unbalanced diet.

For the present the maize theory has been abandoned. The same is equally true of the parasitic theory.

For a number of years the Thompson-McFadden Pellagra Commission has centered its efforts at Spartanburg, S. C. This is a pellagrous region in clay soils of the Piedmont Plateau. This is the very region surveyed

by the U. S. Bureau of Soils. In spite of all this, after describing the springs and wells of this region, Silver and Garrison, in the *American Journal of the Medical Sciences* made the following statement: "We realize that the water supply is not considered to be of any importance as a factor in the ethology of pellagra. In this study, however, we have endeavored to investigate as far as was possible all probable factors concerned in the epidemiology of the disease and for this reason have considered the water supply. We have found nothing of any apparent significance in this connection."

Perdue further says "The research of Alessandrini and Scala was done in Italy prior to August 1914. Up to this time official and 'authorized' medicine in America had taken its 'Kultur' from Germany." Therefore, the findings in the University of Rome were unscientific. The U.S.P.H. Service undertook an official counter research to discredit the findings of Alessandrini and Scala. To conduct the experiment it selected a surgeon with a very German name. This so-called experiment was conducted in Mississippi. Twelve long term convicts from the State penitentiary were the victims. It was predetermined that pellagra was a deficiency disease.

Scurvy was selected as the disease most readily confused with Pellagra. The convicts were fed the same meal three times a day for nine months. This was a regimen calculated to kill the most hardy. Of course, some of them took sick. Their sickness was pronounced pellagra. From this has followed the monstrous and gratuitous insult that the people of the South are underfed. This propaganda enjoys the prestige and frank of the Federal Government. It has deceived many and greatly retarded the work of eradicating pellagra. Another counter research was undertaken by Joblin and Petterson at Nashville, Tenn. It was published in *The Journal of Infectious Diseases*, May 1916. In this paper the following statements were made: "We are unable to find that water has any relation to the disease. City water, water from wells, springs and cisterns, was used indiscriminately, without apparent influence on the incident of the disease. The well and

the spring water is hard water because of the presence of lime salts. This would tend to disprove the theory advanced by Allesandrini and Scala that the disease is due to the presence of colloidal silicates which are removed by adding lime.

The general character of above statement ignores the local and individual condition in Tennessee and takes no account of the fact that river waters in Tennessee are pretty nearly evenly balanced in silica and calcium and that there are many instances in locali-

ties where the silica predominates. All of these researches evidence the bias which is inseparable from a research undertaken to attain predetermined results. All show that poverty of scientific acumen which is such a disappointing characteristic of all American research which has so long been a slave to the German method.

I desire to make acknowledgement to Dr. E. M. Perdue for much of the latter portion of this article.

KIDNEY SURGERY.*

GEO. R. LIVERMORE, M. D., F. A. C. S., MEMPHIS.

THE advances in the diagnosis of diseases of the kidney, the numerous functional tests and the study of the chemical constituents of the blood have put kidney surgery in the vanguard of the modern surgical progress.

In the past the presence of albumin in the urine as determined by the heat and nitric acid test was considered diagnostic of nephritis and the patient immediately put upon Baham's Mixture, a nauseating compound of little therapeutic effect, composed of Tincture of Chloride of Iron, Dilute Acetic Acid and Ammonium Acetate.

We now know that the presence of albumin in the urine may be indicative of many conditions other than nephritis; the dread tuberculosis of the kidney manifesting itself in the early stages only by a mere trace of albumin, together with a few pus and blood cells.

That the mistake of considering albumin in the urine pathognomonic of Bright's disease is not confined to the doctor with little experience. I have recently had under my care a woman whose urine contained quite a large amount of albumin, who had been under the care of three capable physicians,

all of whom treated her for Bright's disease, when in reality she was suffering from pyelitis, due to the colon bacillus. Her urine has cleared up entirely under irrigations of the kidney pelvis through the cystoscope.

A few pus or blood cells occurring in the urine or even a trace of albumin, provided they are not of constant appearance, may mean nothing more serious than some digestive disturbance or overexertion, but their constant presence is positive indicative of disease and demands immediate examination to locate the source and cause before more serious damage may occur.

In the early stages when only one kidney is involved, tuberculosis is curable, even though there may be tuberculous infection of the bladder. In fact it is remarkable how rapidly these patients improve and the irritability of the bladder subsides after the diseased kidney is removed; but delay often means the dissemination of tubercle bacilli to the other kidney and when this has occurred, the patient is past surgical or medical relief.

I have recently operated upon a woman for tuberculosis of the kidney, who has suffered for five years with irritability of the bladder and has had no treatment except bladder irrigations. When a case comes under your care suffering from frequent and painful urina-

*Read before the Tri-State Medical Association at Memphis, Nov. 21, 1922.

tion and you try irrigations of the bladder for a week and there is no improvement, the infection is in all probability in the kidneys and if you use nitrate of silver and the patient's symptoms are aggravated, you can suspect that you are dealing with a case of tuberculosis of the bladder, secondary to tuberculosis of the kidney.

Blood in the urine may signify any number of pathological conditions of the kidney. For example, tumors, malignant and benign, stone, tuberculosis, acute infection, hydronephrosis, floating kidney and polycystic kidney and idiopathic or essential haematuria. In the last named condition, no definite pathology can be found, yet haematuria is present. It is relieved usually by nephrotomy or decapsulation.

There is also an interesting condition of the kidney in which the only symptom is pain. Careful examination fails to find any abnormality yet the pain persists. This too can usually be relieved by surgery, the mere stripping off of the perirenal fat being all that is required to give the patient relief. Of course neither this operation nor nephrotomy and decapsulation should be done until all diagnostic measures have been exhausted in our efforts to determine the cause of the pain or hemorrhage.

There are four factors that determine the success or failure of kidney surgery. First and by far the most important, preparation of the patient for operation. Many patients

are operated upon the day they reach the hospital. This is a very unwise procedure for in no other class of work except prostatectomy is the preoperative preparation so important. This consists of the free use of water. If the patient is septic, alkalies first, then urotropin and acid sodium phosphate. Purgation. The determination of each kidney's function and the urea and creatinin content of the blood.

Second: The position of the patient on the operating table and I find Dr. Caulk's position the most satisfactory.

Third: A large free incision beginning at the costo-vertebral angle and curving downward and forward midway between the free border of the ribs and the crest of the ilium, and carried forward far enough to give a good exposure of the operating field.

Fourth and by no means least: The post-operative care. Water by mouth, by rectum or subcutaneously. Urotropin and acid sodium phosphate as soon as possible. No food for twenty-four to forty-eight hours. Bowels to be moved in forty-eight hours; the relief of pain by morphine or pantopon.

In the discussion at the recent meeting of the Southern Medical Association in Chattanooga, Dr. Braash stated that damage may result from giving too much water. This might be possible when given intravenously, but I defy anyone to produce any untoward effect by giving water by mouth, by rectum or subcutaneously.

THE NECESSITY FOR MORE THOROUGH ROUTINE PHYSICAL EXAMINATION OF ALL PATIENTS.*

JAMES W. McCLARAN, M.D., Jackson.

ONE of the most convincing arguments in favor of our progress in medicine is the passing of the habitual prescription writer, the man who has a prescription for every complaint, whenever or wherever presented, on the street or wherenot. How easy it was, when told that a patient

had rheumatism most of the time, to prescribe or give salicylate of soda. But if you do this often now, how long before the other fellow is going to find those bad teeth, or tonsils, or prostate? How easy it is to give aspirin for the headache Mrs. Jones is subject to. But how long before the other fellow is going to find the eye strain or pelvic pathology that is causing it? How long before someone is

*Read before the West Tennessee Medical and Surgical Association, at Jackson, May, 1922.

going to find that the indigestion you have been giving pepsin to, was a case of appendicitis?

A few years ago the tendency was to make the diagnosis incidental to the treatment, but now the procedure is reversed and rightly so, and the diagnosis is considered vastly more important. At most of the large hospitals the drugs consist of a few simple stock solutions, such as one or two good mixtures, cathartics, and other drugs in simple form. No shot gun mixtures or fancy solutions, and these hospitals are considered the fountain head of our profession.

The patient and his family have also changed, and he is no longer satisfied to submit to prescription after prescription without knowing what the trouble is, or at least having an explanation as to why no definite diagnosis is attempted. He must see that his medical attendant is at least making an effort to diagnose his case.

The examinations required in the late war for admission into the army disclosed the fact that thirty-four per cent of men at the most favorable age of life were unfit for military training even at the camps. This should convince us that physical disabilities are not rare but every day occurrences in our patients and account for the majority of common symptoms related to doctors every day. How many cancers would be found that are amenable to treatment at that time, but a little later are incurable. How many cases of tuberculosis could be saved going to cavity formation if a careful examination was made.

The Life Extension Institute of New York, between 1914 and 1920, examined 150,000 people. They divided these at the age of 34 into six classes as follows:

- Class 1. No physical impairment reported and no modification of living habits required 0%
- Class 2. Slight physical impairment or defects requiring observation or hygienic guidance 10%
- Class 3. Moderate physical impairment or defects requiring some form of hygienic guidance or minor medical, dental or surgical treatment 41%
- Class 4. Moderate physical impairment

- or defect, medical supervision or treatment advised in addition to hygienic guidance 35%
- Class 5. Advanced physical impairment or defect, requiring systematic medical supervision or treatment 9%
- Class 6. Serious physical impairment or defect urgently demanding immediate attention 5%

The above figures show how easy it is to find disabilities if they are looked for. It is the cumulative effect of various physical defects and errors in living habits that are responsible for premature physical breakdowns and premature deaths. Most breakdowns and most premature deaths are preventable or least postponable if defects are found in time by careful examination.

Competent examiners never find a perfectly sound individual. The average person presents fairly numerous physical defects. Failure to find these, even though they are unimportant, shows a laxness in examination. Nothing is more absurd than the average insurance examination in which, unless the applicant has a gross lesion of some kind, his report is filled out as if he was perfect. But with the average insurance company, if a careful examiner noted these defects, although slight, the applicant is turned down. A repetition of this and the examiner gets a reputation of being hard on applicants and the agent manages to avoid his examinations and as a result, the careful examiner suffers a pecuniary loss.

In the beginning of this paper, comment was made as to our progress in making careful diagnoses and being dissatisfied with the blind treatment, but we must not become too highly specialized in our routine examinations and pass the buck too much to the bacteriologist, x-ray man and other specialists. Not that I am disparaging the work of these men or saying that these specialists are unnecessary, but I do think that we are inclined to shirk somewhat the responsibility of a clinical diagnosis. I think these adjuncts should be used after we have made a most careful and comprehensive physical examination, and a diagnosis at least attempted, and not after simply a cursory "once over." Our

preceptors may have been inclined to use more medicine than we do but we must take off our hats to them when it comes to a clinical diagnosis without laboratory and other aid. They did not have these aids and necessity is the best teacher. The point I am trying to make is that we must not let these diagnostic aids dull our own skill in making a diagnosis.

Wide as is the scope of modern medicine, and necessary as are the specialties into which it is subdivided, I believe that no physician or surgeon is really competent to practice medicine or surgery who can not survey the human body completely and at least ascertain whether there is suspicion of any defects or trouble in any region, though further special diagnostic technique is required to interpret it completely. The tendency to shift one region after another into the realm of a specialty, even with regard to the superficial examination of that region, is responsible for much dissatisfaction on the part of the general public with medical service. The physician or surgeon who equips himself to make a complete survey of the human body has a long lead over those who confine themselves to the treatment of acute and chronic diseases and who can not more completely interpret the condition of their patients. The specialist who confines himself absolutely to his specialty in the matter of an examination is handicapped and is not the well rounded man in his profession that he should be.

The equipment necessary to make this complete survey is not extensive and a doctor who acquires the technique necessary to make a good examination conveys to his patient a suggestion of completeness and thoroughness in his work which would go far to establish him in the confidence of the people and the profession, besides having the satisfaction of knowing his work is well done.

In this short paper it would be impossible to give anything but a suggestion as to the routine examination which can be modified to suit the individual examiner. The following becomes second nature with practice and it is surprising the number of unexpected lesions picked up. One of the most important points in doing a good physical is that the examiner must concentrate on the patient

and put all extraneous matters out of his mind.

1. A family and personal history, including past and present complaints, should be taken. The length of this depends on significant facts brought out at the quiz.

2. The general appearance of the patient should next be observed, his color, gait, emaciation, if present, gross tremors, etc.

3. The height and weight should be taken with at least the coat and vest removed and in women the waist and corsets removed. The male patient should then be stripped to the waist and further exposure attained with the progress of the examination. It is important to prevent chilling of the body and in the case of women no undue exposure should be made. The examination of women should be as critical as that of a man, always using tact and discretion. An examination of the chest through clothing, no matter how thin, is absolutely worthless. Proper draping with sheet, towel or poncho, is possible and the part being examined exposed, without objection from the patient.

4. Eyes. The eyes should be looked at for diseases of the lids, ulcers, etc. Gross tests for astigmatism and visual acuity, by means of test types, do not take much time, are easily done and reveal many cases of neglected eye strain. These tests are done at 20 feet and are recorded in twentieths as read. If the twenty foot line can be read only at 15 feet, the vision is 15-20 and so on. A card should be held over the eye not being tested rather than have the patient close the eye. An electric ophthalmoscope is a great aid to diagnosis but this can be considered in the realm of the specialist. Note inequalities of the pupils, and whether they react to accommodation and to light. Examine each eye separately. A pocket flash light is very convenient for testing pupillary reaction. If natural light is used, place the patient opposite a bright light, be sure his accommodation is relaxed and cover the eyes with both hands. Leave them covered about one-half minute, then withdraw one hand and watch the pupil. Inequality of the pupils may be without significance, but as a rule it is very important. The three I's; Irregularity, Inequality and Immobility are especially characteristic of

syphilis. Test for accommodation by placing the finger close to the patient's nose, ask him to look away at a distant object, and then look suddenly at your finger. The pupils should become decidedly smaller.

5. Now have the patient turn around and place his hand flat over one ear and we are ready for the test of hearing. Repeat sentences or numbers in a conversational tone and have him repeat them after you. If there is any difficulty in hearing, walk toward the patient and repeat the numbers etc., until he hears, and then express his hearing in twentieths according to the distance heard, as if at ten feet, 10-20ths, etc.

6. Next look at his mouth. Note carious teeth, recession of the gums, pyorrhea and mucous patches. Next examine the (throat using a tongue depressor. Note diseased tonsils, remembering that all diseased tonsils are not necessarily hypertrophied, but that the small imbedded type is also a trouble maker. In case of suspicious teeth, advise x-ray.

7. Next examine the thyroid gland. Note presence of hypertrophy, exophthalmus, tremor, tachycardia and sweating.

8. Lungs. A careful examination should always be made of the lungs, no matter what the state of nutrition, but the examination should be especially searching if a history of haemoptysis, night sweats, progressive loss of weight, etc., is given. The shape of the thorax should be carefully observed. Palpation, percussion and auscultation should then be done. I think the most important point of all is the auscultation, using the expiratory cough. This is done by instructing the patient to force the air from the lungs, reserving the last portion for a short cough and then follow with an inspiration. It is best to do this for the patient and have him do it several times, before you start the auscultation. A good stethoscope, with sound tubing, and fitting the ears well, is a necessity in a good examination. The instrument should fit the ears in such a manner that all extraneous sounds are excluded.

9. Heart. The position of the apex should first be located. Next you should auscult the heart sounds over the apex, lower sternum, and second and third interspaces to the right and left of the sternum, noting accentuation of sounds and murmurs. Next inspect the root

of the neck and upper thorax and percuss the first interspace on each side of the manubrium for evidence of aneurism. If the heart is rapid, be sure and give the patient opportunity to get over his nervousness. Remember that many murmurs are not heard except after exercise, and others are heard only in the recumbent position. It is important to take the pulse rate, before, immediately after, and two minutes after exercise. Next the blood pressure should be taken by the auscultatory method.

There is too much tendency at the present time to disregard cardiac murmurs which are not associated with palpable evidence of disease, and also a tendency to minimize the importance of frank valvular lesions. This is not borne out by insurance mortality tables. However, under careful regime, certain valvular types of impairment need not materially shorten life.

10. The examination of the abdomen should include a history as to pain, haematemesis, and character of stools. Palpation should elicit tenderness, hernia, enlarged viscera, nephroptosis, etc.

11. A genito urinary examination in men and a pelvic in women should be made if history indicates. The same is true of a rectal examination.

12. A few neurologic symptoms should be looked for, such as examination of patella reflexes, tremors, coarse or fine, and Romberg's sign sought by having eyes closed and heels together and designated by swaying of the body.

13. Feet defects should be looked for, and if found, whether the defect is associated with symptoms or not. The characteristic signs of flat foot are: tendency to toe outward, inward bending of the ankle and, not always, lowering of the arch. Note type of shoe worn.

14. The skin should be examined for eruption, rashes, etc.

15. Examine the urine.

The above routine is not near as long as it appears on paper and some of the above can be done in as little time almost as it takes to tell about it. It means more accurate diagnosis, more personal satisfaction in your work, and best of all, in the long run, more patients and a better class of patients.

CAESAREAN SECTION*

JERE LAWRENCE CROOK, A.M., M.D., F.A.C.S., Jackson.

THIS operation is supposed to be of great antiquity, tradition telling us that Julius Caesar was removed through the abdominal wall immediately after the death of his mother and therefore Julius Caesar has given to the operation its name. Of late the operation is being done far more frequently than formerly. This is due to a variety of causes, chief among which is the great progress which has been made in abdominal surgery, rendering the operating hazard to the mother immeasurably less than during the preaseptic era. Another reason is that owing to the progress and improvement of obstetrical science the members of the profession have become more efficient in pelvic measurements and in diagnosing beforehand conditions which would render normal labor impossible. I regret to say that there is a tendency on the part of some specialists to do the operation more frequently because of its apparent ease of performance when done on a non-infected patient in the ideal environment which a modern hospital affords. I desire to state right here and now that I do not believe a surgeon is justified in performing the operation of Cesarean section unless he is satisfied in his own mind that normal labor is impossible. The indications as given in the latest medical literature are as follows:

First and foremost. Pelvic Deformities.

a. When the true conjugate diameter measures under $2\frac{1}{4}$ inches Cesarean section should always be done in preference to craniotomy.

b. In non-infected cases where the child is viable.

2. New growths of the genital organs or pelvic structures obstructing the birth canal.

a. Fibromyomata.

b. Cancer of the cervix, vagina, rectum or bladder.

c. Tumors of the ovary, not discovered until labor begins. Should the tumor be discovered in time it should be removed and labor allowed to proceed to its natural course.

3. Narrowing of the parturient canal by cicatrization.

4. Placental conditions.

a. Central placenta praevia and accidental hemorrhage have been put down by some operators as indication for operation.

5. Rupture of the uterus and deformities of the uterus.

6. After ventral and vaginal fixation of the uterus sometimes requires Cesarean section.

7. Eclampsia with rigid cervix.

With these preliminary rules as a basis for discussion I shall content myself with reporting three recent cases.

Mrs. J. W. M., September 11, 1919. At one-thirty on September 11, 1919 I was called by Dr. Bennett, of Trenton, who informed me that he, Dr. McRae, and another physician had used their utmost efforts to deliver a patient for practically twenty-four hours. He stated the woman had two normal children and he was unable to determine why delivery could not be effected. He also stated that on account of her having two normal children he had felt justified in prolonging the efforts at instrumental delivery. He said they were leaving Trenton at once and a Cesarean operation would be necessary. Arrangements were made and immediately on arrival the patient was prepared for operation. Incision was made below and extending above the umbilicus in the mid-line of the abdomen and the uterus immediately presented itself. It was incised, membranes ruptured and a very large baby with the placenta and membranes were removed, the cord first being clamped. With dry gauze the remaining shreds of placenta were removed, the assistant meanwhile making pressure on the uterine arteries. The incision through the uterine wall

*Read before the West Tennessee Medical and Surgical Association, at Jackson, May, 1922.

was made longitudinally, beginning at the summit of the fundus down through the upper portion of the wall sufficiently large to remove the child. The child was handed to Dr. Bennet who succeeded in resuscitating it after a few minutes. The cervix was examined and found to be relaxed; consequently no gauze was passed through it. An ampoule of pituitin was injected into the muscular wall of the uterus as soon as the child was delivered. The incision in the uterus was closed with interrupted sutures of catgut one-quarter of an inch apart so placed as to include the whole thickness of the muscular wall but not through the mucosa, all being tied quite carefully. A superficial suture of finer catgut, continuous, was next inserted, closing the peritoneal coat over the first row of sutures. The abdomen was then closed in three layers in the usual manner. The baby lived about twenty-four hours, dying from hydrocephalus which condition was the cause of the failure to perform delivery by the very competent men who had the patient in charge. The head measured eighteen and one-half inches both ways. The mother made a perfect recovery and left the hospital in seventeen days.

The next case was Mrs. H. A. T., January 31, 1922, who was brought to the hospital at midnight by Dr. McDonald, of Bells, Tenn., in an automobile. Although this patient had been in labor twenty-four hours the head had failed to engage and there was no dilatation of the cervix. She had a very much contracted pelvis and it was evident that normal delivery was impossible. She was four feet, ten inches tall and weighed about ninety pounds. This little patient was in fine condition, bright and cheerful, and was prepared for immediate operation. The technique in this case was somewhat different from the first as I delivered the uterus outside of the abdomen before incising it. The closure and

other steps of the operation were the same. The patient had no untoward symptom except a severe rigor on the fifth day followed by a temperature of one hundred five and one-half. This was most alarming until we made a blood test which showed a virulent type of malaria. Three grains of calomel and plenty of quinine cleared up the case in twenty-four hours and she had no further untoward symptom and she and the baby left the hospital on the sixteenth day, the baby having gained several ounces in weight.

The third case was Mrs. D. L. R., March 28, 1922, referred by Dr. Brown, of this city, who had examined the case very carefully and had engaged my services before labor began as the case was evidently one that only Caesarean operation could relieve on account of the deformed pelvis and small size of the patient. This lady was four feet, three inches tall and weighed about eighty pounds. The technique in this case differed from the other two in these respects: the uterus was not delivered and three layers of sutures were made, the first, No. 1. Catgut, plain, was a continuous suture beginning in the lower angle and including only the mucous coat; the second layer, No. 2 Chromic Catgut, beginning at the upper edge of the incision and continuing without interruption to the lower edge including the entire muscular wall down to the mucous layer; the third layer was No. 1 Chromic Catgut and was a Lembert suture enfolding the peritoneal coat from the lower to the upper angle of the incision. The remaining steps of the operation were the same. This little patient had no untoward symptom whatever and left the hospital in sixteen days. The baby weighed seven pounds at birth and seven and one-half pounds on leaving the hospital.

In the last two cases I was very ably assisted by Dr. Chas. Webb and Dr. O. V. Jones, anesthetist.

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APRIL, 1923

NINETIETH ANNUAL SESSION

Viewed from the time of the present writing, the Ninetieth Annual Session of the Tennessee State Medical Association promises to be one of the best and most interesting ever held in the history of this body.

The work of the Committee on Arrangements, which includes our president ex-officio, under the able direction of its chairman, Dr. Joseph F. Gallagher, has been untiring and unremitting in its labors, as clearly shown by the results attained to date.

Already the scientific program nears completion and with the other (evening, special sections and clinical programs) shows an interesting variety of subjects treated by many of the ablest men in the Association, most agreeably supplemented by contributions from distinguished visitors from several other states.

APPROACHING THE ONE HUNDRED MARK

The next Annual Session of the Tennessee State Medical Association, to convene in Nashville, will be the *Ninetieth* one held by the organization. The point has been reached where reference may logically and rightly be made to the "ancient" as well as "honorable" history of the body.

It is a history that has been made by some of the most brilliant and strongest citizens of this commonwealth. Only a few of its members have had an active place in the legislative halls or held state office, but these are not the only spheres from which history emanates, but also from the traditions, recollections and memories of a people and here have been held the names and respect of many of our members not only for decades, but now for generations.

REPRESENTATION IN THE HOUSE OF DELEGATES

(From the "Bulletin" of the A.M.A.)

When a medical society is organized, all of its members assume certain definite obligations with respect to the support of the society in all of its activities. In the scheme of medical organization which now is in operation in the United States, one outstanding purpose which runs prominently throughout the whole plan is that democratic principles shall prevail. Representation in all of the legislative and business bodies of the various societies is based on numbers and is determined, in all instances, by the votes of the members themselves. It is a necessary assumption that all the members of a society will remember to live up to their obligations, one of the most important of which is that all shall participate in organizational affairs and in the selection of those who are to represent the membership in determining policies and in putting these policies into execution.

Every component county medical society is entitled to at least one delegate in the house of delegates of the state association of which it is a component unit. Every delegate elected by a component county society to represent it in the house of delegates of the constituent state association is charged with a very responsible duty and should make every possible effort to present himself for service in that house of delegates. Every constituent state medical association in the United States is entitled to at least one delegate in the House of Delegates of the American Medical Association. By action of that House of Delegates, each of the Sections of the Scientific Assembly of the American Medical Association, the Medical Corps of the United States Navy and the United States Public Health Service are entitled to one delegate each.

Every component county society has a right to representation in the house of delegates of the constituent state medical association and every constituent state medical association has a right to representation in the House of Delegates of the American Medical Association. Through these delegates, each member has a right to be represented.

It remains only for the county societies and the individual members to exercise that right in order that they may participate actively in the determination of all policies and in the prosecution of all plans for the betterment of organized medicine and for the interests of the medical profession.

DR. OLIN WEST

The Tennessee Medical Association as a body and all of the individual members are looking forward with feelings of the most pleasant anticipation to seeing and hearing again their former State Secretary, Dr. Olin West, now Secretary of the American Medical Association. Dr. West is on the program for an address at the night session of Tuesday and has signified his intention of spending at least one day at the meeting.

COUNTY MEDICAL SOCIETIES

HAMBLETON COUNTY MEDICAL SOCIETY (Reported by Dr. C. T. Carroll, Secretary-Treasurer.)

This Society reports in good condition, with many good papers.

The following selection of officers has been made for 1923: Dr. L. H. Milligan, President; Dr. D. E. Shields, Vice-President; Dr. C. T. Carroll, Secretary-treasurer; Dr. W. G. Ruble, Delegate to the House of Delegates, Annual Session of the Tennessee State Medical Association, with Dr. S. M. Ryburn as alternate.

MADISON COUNTY MEDICAL SOCIETY

The Madison County Medical Society has selected Dr. J. W. McClaren as delegate and Dr. S. M. Herron as alternate to the Annual Session of the Tennessee State Medical Association.

MEDICAL NEWS AND NOTES

TENNESSEE STATE ASSOCIATION OF RAILROAD SURGEONS.

This Association will hold its first annual session on the night of Monday, April 9, 1923, which is the evening before the annual

session of the Tennessee State Medical Association.

The following letter and program have been sent to the members of the Railroad Surgeons' Association by the president of that body, Dr. Duncan Eve, Sr.

Nashville, Tenn., March 17, 1923.

Dear Doctor:

At the meeting in Chattanooga, November 13, 1922, of the Southern States Association of Railroad Surgeons, the Tennessee State Association of Railroad Surgeons was organized to meet annually just preceding the meetings of the Tennessee State Medical Association, which this year meets in Nashville, April 10, 11 and 12; therefore, we are calling a meeting of the railroad surgeons in this state for the evening of Monday, April 9, at the Hermitage Club auditorium at 7:30 o'clock, and trust to have you with us. Nearly every state has its Railroad Association; Kentucky and Georgia have very instructive yearly meetings and we hope all the railroad surgeons in our state will become interested in this new organization, for there can be no doubt that through organized associations we make better surgeons and thus render to the railroads we represent better service.

As the coming meeting will be our first, and without a regular order of business, we have taken the liberty of presenting the enclosed program, and let us, when we meet, have a very short Constitution and By-Laws and no dues.

Trusting to have the pleasure of shaking your hand April 9, I am,

Yours very truly,

DUNCAN EVE, *Pres.*

PROGRAM

Railroad Shock—Lucius E. Burch, Nashville,
A Discussion of the Preparation of Dakin's
Solution—Battle Malone, Memphis.

Diagnosis and Treatment of Fractures of the
Neck, the Humerus—E. T. Newell, Chattanooga.

Sarco-Iliac Strain or Relaxation—Subject for
general discussion to be opened by a short
paper from the President.

Adoption of a Constitution and By-Laws.
Business of any character.

All papers limited to fifteen minutes.

All discussions limited to five minutes.

THE MEDICAL PRACTITIONER AND THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

By J. E. RUSH, M.D., *Field Director, American Society for the Control of Cancer.*

Among the most important public health problems confronting the medical profession today is that of cancer control. It is possible to make a division of public health movements into several groups, depending on the amount of educational work which must be carried out before the program can be successful. In one group we find such diseases as Typhoid Fever, Malaria, and Yellow Fever which may be controlled simply by educating a few individuals who possess the necessary power in a community to place the program in operation after they have been shown the desirability of such a procedure. This type of activity is relatively simple because it depends upon the education of a few individuals. Unfortunately, the diseases that can be controlled in this manner are among those which usually do not exact from the populace the greatest economic toll.

Another group of diseases may be effectively dealt with through police power and here again we depend on the education of a few members of any given community. For the most part the diseases which may be controlled by this means we refer to as "communicable" and usually they can be very effectively dealt with by placarding, isolation and quarantine.

There is another group of diseases which are not communicable and in which the education of but a few members of the community is not sufficient to affect the mortality rate. Here we find cancer, which depends for its ultimate control upon the education of every single adult of the community, with reference to the early signs and symptoms of the disease, for only in its early stages is cancer curable. With the present attitude of the public to seek medical advice only when they are aware of distressing symptoms, they must be told that early cancer is usually painless and that proper treatment cannot be insti-

tuted until they have sought the advice of a physician.

The medical profession is interested in all types of medicine whether preventive or curative. As a matter of fact, there really is no hard and fast line of demarcation between preventive and curative procedures any more than there is a dividing line between the metals and the non-metals. The medical profession is interested in all problems of public welfare but when it comes to matters concerning public health they are the only ones who through tradition and training are capable of handling the problems which present themselves for solution. It is the only profession at the present time that is engaged in real preventive medicine and it is the profession of election for this type of work. Usually public health movements have been initiated by the medical profession but in many instances the work has passed into the hands of the laity because the members of the medical profession have been preoccupied with other important problems.

What we have said with regard to the attitude of the medical profession towards public health work clearly emphasizes the need of control by the medical profession of all public health movements. The profession is particularly interested in the problem of cancer control not only because it is of great humanitarian interest but because of the further fact that cancer is one of those conditions in which it has been clearly demonstrated that the medical profession is the only one capable of offering a solution. While sanitary engineers, epidemiologists and others may be of great value in the conduct of specific public health movements their training and experience does not make them capable of helping in cancer control. The slogan of the American Society for the Control of Cancer that "Early cancer is curable if you will but consult your medical practitioner in time," again clearly emphasizes that the physician is the only one capable of reducing the mortality from cancer.

Another interesting feature of the movement for cancer control is that the establishment of diagnostic clinics during National Cancer Week is of some educational value to certain members of the medical fraternity

because important points of differential diagnosis between early carcinoma of tongue, for example, and primary luetic ulcer, are demonstrated. The cancer movement in this respect, is one of the few that attempts to repay the physician for the great effort he has expended in its behalf.

It has been claimed by some of the unthinking individuals among the laity that preventive and curative medicine are diametrically opposed. They do not realize that there is, in the last analysis, but little difference between preventive and curative measures. For example, all physicians take blood pressures and make urine analysis during the course of a pregnancy and not by the wildest stretch of the imagination can this be interpreted as a curative measure—it is a preventive measure pure and simple.

Through various educational movements which are now being conducted to instruct the public with regard to conditions which are definitely preventable, the great mass of the people are gradually coming to realize that the physician must be looked upon as a teacher and advisor rather than one who is to be consulted only when symptoms of a diseased condition have manifested themselves. The physician, too, realizes that this teaching attitude is appreciated by the public for by this means he is able to prevent premature deaths among his clientele. Not only does he spare the patient in question for future usefulness but, more important, he does not divorce the rest of the members of that particular family. The physician realizes that the most appreciative patient is one who, through early advice and proper instruction, has been saved from untold suffering and an untimely death.

All health movements if properly managed and ethically controlled by the medical profession will not only eliminate certain objectionable features present in some of them as now conducted by the laity (who have no appreciation of medical ethics) but such activities will help consolidate the medical profession against the ever increasing influence of the cults. It is true, that we as a profession, do not heartily approve of certain public health movements now in progress, because they do not conform to our

ethical code. If they were controlled by the medical profession this objection would be removed.

It must be realized that the cults never would have existed had the medical profession taken a definite stand against them, but realizing that "Imitation is the sincerest flattery," we have allowed them to go on—to exploit the public until even the great mass of the people has recognized the lack of sincerity which prompted the various movements.

The proper extension of these ideas relative to organization in order to control public health problems contains within it the answer to the proponents of that most preposterous type of activity known as "State Medicine."

The organization for cancer control is dependent upon the activities of the medical profession; and therefore the units upon which the organization is built are the State and County Medical Societies. The whole movement has been endorsed and approved by practically all national, sectional, state and local, medical and surgical bodies, because it is entirely controlled by the profession itself. In the perfected organization for cancer control we have the ground work to handle other problems of a public health nature; be they ones already in existence or future ventures. By proper organization, too, we shall be in a stronger position to abort detrimental legislation, whether directed at us or to legalize the ignorant cults. A public health problem directed solely by physicians will do more to properly organize the medical profession than any other type of activity.

It has been pointed out that if we do not seriously consider the "scientific attainments" of the cults, then every preventable death is a reflection on us. It has been claimed that the fact that the patient did not come early enough to us for examination and advice is no excuse—that we, as the only logical profession engaged in the practice of the healing art should have the undivided confidence of the public to such an extent that they will report to us what are very trivial matters and thus give us opportunity to institute proper procedures in time. In the

vernacular of the street, it has been suggested that we should "sell ourselves to the public"; which in other words means that there is at the present time a great need of ethical publicity on the part of the profession. It really seems that this would, to a very great extent, increase our usefulness to the community in which we practice. If this is true, then no physician can be so busy that he cannot devote a small amount of time to help in the campaign for cancer education, because by so helping, he is not only advancing his own usefulness to his community but is of the greatest value to his medical brothers and to his profession.

A few members of the laity have explained what they have interpreted as apathy on the part of certain of the medical profession toward preventive medicine, by emphasizing the fact that preventive medicine was diametrically opposed to curative measures. We, of the medical profession realize the fallacy of this. Let us consider an analogy from the field of engineering. Suppose that ten engineers were bidding on a contract to construct a road between two adjacent cities. Only one could be successful; but would the others put obstacles in the way to prevent him from completing his task? The answer is apparent. They would not; for they would realize that when the public had seen the values of this road, they would demand similar ones in all other directions and hence the other engineers would have an opportunity to build some of them. I realize that the above example compares a business conducted purely for monetary return to a profession which interests itself chiefly with humanitarian efforts, but the very few of the public who believe that all persons are actuated by ulterior motives should be answered. The good roads analogy applies directly to medicine, for the medical practitioner realizes that each time the public is convinced that it is unnecessary for them to suffer with various ailments they demand the removal of others which heretofore they patiently tolerated. An example may illustrate this point:

A friend of mine who for many years was almost an invalid from recurrent attacks of what was then diagnosed as "inflammation of the bowel" and for which, at that time there

was no known cure, was simply forced to allow the condition to exist which undermined his health and lowered his efficiency. At the present time because of the knowledge of the laity concerning chronic appendicitis he would know that an operation requiring him to be at a hospital for but two short weeks, would give him complete relief, and enable him to resume his life's work at a greatly increased efficiency.

Our medical ethics instituted at the time of Hippocrates admit of no change; but our interpretation of them may be broadened to meet the changing conditions; especially those which have been brought about during the past two or three decades. It may be necessary to change our ideas regarding proper non-personal publicity for the medical profession as a whole and for our state and county societies. In this connection I am reminded of the story of the young color-bearer at Gettysburg who had advanced somewhat ahead of the lines, and when ordered back to his position by his commanding officer replied, "Bring the line up to the flag."

A LESS EXPENSIVE CURE

In the lulls of the battle against the chiropractor the thought often occurs whether it is necessary—or worth while. Few who complain of the seeming inactivity of the medical societies in the face of cult aggression realize the obstacles in the way of a far-reaching campaign against the quack. Very few, even among the most persistent critics of passivity, would be willing to contribute to the funds necessary for a real tug-of-war.

To any one familiar with the ways and by-ways of the advertising field, it is well known that a heavy toll marks each step—and that many steps must be taken if a public campaign is to be a success. The quack of every cult has found one of his greatest assets to consist in extensive and persistent press publicity. Fighting fire with fire, our antidote to the poison of quack propaganda would have to be more propaganda—but propaganda distilled and distributed by the friends and defenders of the medical art. Every article in the daily press bearing testimonial to some fraudulent cure-all, every ad-

vertisement in the periodical magazines lauding the powers of some exploded pseudo-scientific theory, every poster in street car or public waiting room attesting the efficacy of some worthless nostrum, would have to be met and countered by an equally convincing article, advertisement or poster, expounding in clear and interesting terms the wonders and powers of medicine. Educational articles, coming from recognized authorities would be necessary, and thoroughly trained speakers to address public gatherings.

Such a cure is almost as expensive as the disease itself, however, and in the long run it is questionable whether active medical opposition is any more effective than the enlightening ministrations of time. A policy of passive resistance—which has yielded such successful results in political and economic struggles, might prove just as effective a weapon if wielded by the doctor against the quack.

The objection of the medical man to chiropractics is always regarded with suspicion and accepted with more than a grain of salt by the laity in general. Minds trained in the competitive methods of business find it difficult to credit the purely altruistic and judicial motives of an opposition where financial jealousy might conceivably be present as the real cause. So the destroying force of cynicism weakens the doctor's brief.

Then, too, chiropractics continue to thrive because the public—whose credulity has inspired too many proverbs and axioms to require epigrammatization at our hands—does not yet realize the shallowness of the scientific soil in which the pretensions of the cult are rooted. To have persuaded the burghers of old Salem that the witches they saw darkening the air on broomsticks were the products of their own imaginations would have been impossible—and few would have had the courage to essay it. It is not a much lesser task to convince the proponents of chiropractics today that the cure-all which inspires so many enthusiastic testimonials is but a mirage growing out of the shifting sands of popular ignorance.

The power of a rope to hang a rascal—even when in his own hands—has been the basis of many a campaign. A policy of *laissez-faire* might do as much for the chiroprac-

tor. By a policy of nonresistance, we would not mean acquiescence in the licensing of the chiropractor—or any one else—to practice medicine without the same premedical qualifications as the doctor must possess. Were its practitioners given those requirements, though, to lessen their potentialities for harm, how long would chiropractics last as the opponent and supplanter of medical science? Any wrong system, left to operate without interference, will eventually disclose its weaknesses to its most devoted adherents. Chiropractics, as a substitute for medicine, would very soon prove its inadequacy if given legal sway.

Medical Week is not advocating a policy of passive acquiescence as the final development of antiquack thought and procedure. We are rather inviting the consideration and comment of the profession to another method, in view of the financial difficulties attendant upon more active measures. To fight or not to fight; that is the question.—The *New York Medical Week*."

THE STANDARDIZATION OF BIOLOGICAL STAINS.

On March 2 at the Chemists Club in New York City, there was held a meeting of the Executive Committee of the Commission on Standardization of Biological Stains. The members of this Committee are: H. J. Conn, Geneva; F. B. Mallory, Boston; L. W. Sharp, Ithaca, N. Y.; J. A. Ambler, Washington, D. C., and S. I. Kornhauser, Louisville, Ky. The meeting was also attended by C. H. Herty to represent the Synthetic Organic Chemical Manufacturers' Association, and by F. P. Garvan and W. F. Keohan to represent the Chemical Foundation. The meeting is a matter of interest to everyone in the medical profession.

All physicians realize the need of dyes for staining specimens in the laboratory diagnosis and investigation of disease. It is not perhaps so generally realized that the dyes used for this purpose, in order to give constant results, must be of very precise chemical composition; and yet it is a very difficult matter for either the chemist or the biologist to control their composition. Before the war

all stains were imported from a single German firm. This firm did not manufacture stains, but bought textile dyes in batches of considerable size, and after some preliminary testing bottled them and sold them under its own name to the biological laboratories of the world.

When the war broke out the American laboratory was deprived of this foreign source of stains. After the pre-war stocks already on hand had given out, much difficulty was experienced in getting stains of the quality necessary. The Society of American Bacteriologists began an investigation of American-made dyes that were being sold as biological stains. The results of this investigation were so promising that it proved possible to secure the assistance of the National Research Council through whose agency a co-operative investigation was arranged among the members of several national societies. Recently the work has been organized under a special commission independent of the Research Council but still representing the different national societies that were co-operating in the earlier work.

At the executive committee meeting of this Commission just held, the very encouraging results of the work were reported. It was shown that already the stains available in America are in practically all cases as good and sometimes better than the best of the pre-war stains. The most important fact brought out at this meeting was that while the pre-war stains were standardized only in an empirical way, by buying large batches without knowing the exact composition of the dye, they must now be standardized on the basis of pure chemicals.

The reason for this is because it is proving that in some cases the impurities present in the pre-war stains were very necessary. Sometimes these impurities were other dyes and sometimes supposedly inert materials like dextrin. In all such cases the task plainly before the Commission is to find out what the impurity is which was responsible for the good staining qualities of the impure product. Then in the future the users of stains must demand that these impurities be present, not as impurities, but as intentionally added in-

gredients. When this has been done and the products are labeled and used accordingly, the American stains will become standardized in a true sense of the term.

Very shortly the Commission will begin issuing certificates of definite batches of stain that it has found satisfactory. These stains will be put on the market under a special label bearing the name of the Commission. Users of stains must be on the lookout for products bearing this label.

Buyers of stains must also watch for spurious imitations of this label put out by unreliable concerns. Any form of certification appearing on a stain label not bearing the name of the Commission is merely a certification by the manufacturer or dealer himself, and as such has no value.

The Chemical Foundation has very kindly agreed to support the work of the Commission financially.

"SLEEPING SICKNESS."

"The U. S. Public Health Service has no statistics in regard to the prevalence of *encephalitis lethargica*, popularly known as sleeping sickness, that are sufficiently reliable and complete to warrant a statement as to the extent of the disease throughout the United States," says Surgeon General H. S. Cumming. "The disease is 'reportable' by physicians in comparatively few states; and in the larger part of the country only data available are based on newspaper reports. Moreover, the disease is rather easy to confuse with some other diseases; and its prevalence is, therefore, likely to be unduly magnified. Thus, in an investigation made by Dr. H. F. Smith, of the Public Health Service, of the 1918-19 epidemic, 22 per cent of the supposed cases had to be excluded as being really cerebro-spinal meningitis, cerebral syphilis, brain abscess, tuberculous meningitis, epilepsy, poliomyelitis, hysteria, or acute alcoholism.

"The disease appears to be only difficultly communicable. Not a single secondary case is known to have occurred in the immediate families of the patients reported in 1918-19, although some 900 persons were exposed.

"The fatality is rather high. Of the 159

cases studied by Smith, death resulted in 46. or 29 per cent.

"It is interesting, though perhaps not significant, that the peak of the outbreak of 1918-19 was reached in New York City in January; in Virginia in February, and in Louisiana, Texas and Illinois in March. In California the largest number of cases reported in any one month was in April. Whether this progress was related to the season of the year or was merely a result of the spread of the disease is not known. Comparison with the present spread may throw some light on the subject.

"The disease is slow in development and long in duration. The period of convalescence is variable; in some cases recovery is completed within two weeks after the subsidence of the acute symptoms; but in others it is prolonged and leaves its record on the mind, on certain muscles, and on the nerves of the cranium. The mental troubles, however, usually pass off eventually.

"The appearance of encephalitis in epidemic form has, except for one epidemic reported from Austria, always been preceded by an epidemic of influenza. Forty-six per cent of the cases studied by Dr. Smith had had influenza and 54 per cent had not. The influenza attack rate has been ascribed to the lowering of the vitality of the patients by the influenza; but has also been explained as being really due to another attack of influenza which has invaded the central nervous system of the body. Whether or not there is any connection between the two diseases has not yet been established."

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination: Junior Pathological Technician.

The receipt of applications will close on April 24. The examination is to fill a vacancy in the Army Medical Museum, at Washington, D. C., at an entrance salary of \$1,800 a year, plus the increase of \$20 a month granted by Congress.

The duties will consist of the dissection,

preparation, preservation, description, and classification of pathological material and arrangement of this material for exhibit; also independent research work along these lines.

Competitors will not be required to report for examination at any place, but will be rated on the subjects of (1) education, training, and experience, and (2) pathological specimens, to be submitted with application.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or custom house in any city.

March 20, 1923.

Editor,

Editor Journal Tennessee State Medical Association, Nashville, Tenn.

Dear Sir:

Will you kindly publish in your Journal the following information concerning examinations by the National Board of Medical Examiners:

Part I, June 25, 26, 27, 1923.

Part II, June 28, 29, 1923.

Part I, Sept. 24, 25, 26, 1923.

Part II, Sept. 27, 28, 1923.

All applications for these examinations must be made on or before May 15.

Further information may be obtained from the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

Very truly yours,

J. T. RODMAN.

Secretary.

THE AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS.

The American Society of Clinical Pathologists organized in St. Louis in 1922, is doing active organization work among all who are interested in the various laboratory departments. It is desired to organize a State Society of Clinical Pathologists and therefore this call is issued for a meeting of all laboratory men to meet on Monday evening at 8 o'clock at The Woman's Hospital, corner 8th Ave. and Union St., Nashville. This meet-

ing is purposely called for the evening before the State Medical Society meets so as not to interfere with any of the sections of that body.

HERMAN SPITZ,
District Counsellor.

*The American Society of Clinical
Pathologists.*

MISCELLANEOUS

THE CURE OF SYPHILIS.*

The adequate treatment of syphilis, by whatever means it may be approached, is not a matter of days or weeks, but of months and years. In this simple statement lies four-fifths of the problem of the disease in personal and social life. The hold of the *Spirocheta pallida* upon the human body, once it is established, in the overwhelming majority of cases cannot be broken except by wearing it out, so to speak. Nothing is easier to control than syphilis so far as many of the symptoms are concerned. A few pills even, may make a new man of many a wreck. But nothing is more inexorable or more unexpected in its "come-back."

Inadequate treatment carries more than the danger of a failure to cure. It makes possible under an outward aspect of calm, the recurrence of infectious lesions, the transmission of the disease to others, and the progress of the disease in the internal structures, under a skin kept clean and whole by half-way measures. Just what constitutes adequate treatment can only be determined in the individual case. It may be safely said that the three or four injections of arsphenamine and a few mercurial injections or rubs

which many patients get, is not adequate. One or two negative Wassermann tests are no measure of adequacy, popular though this fallacy is. Our last resort must often be the old rules of thumb which still retain a place in the management of the disease that cannot be shaken by any of the epochal discoveries of the last twenty years. In fact some of the most recent work on syphilis is tending to show that what even a good deal of treatment accomplishes is simply a reduction of the infection to harmlessness, rather than a cure signaled by the killing off of all germs.

In face of such considerations, it is becoming increasingly difficult to tell the patient just what cure means and what will secure it. It should in general be understood that for all practical purposes, cure means lifelong freedom from all symptoms and signs of the disease, and no risk of transmission to others, hereditarily or directly. Even abortive cure, to which we pin our hopes, still contains a liberal admixture of faith, which only the clarifying influence of time can justify or discredit. To tell a man with a four-day-old primary lesion that six months of treatment will cure him is near-folly—to tell him that a year will do it is rash, to tell him that two years will see him well, is to enter the borders of conservatism. In the fully developed secondary case, not only are two and perhaps three years of systematic treatment necessary, but there must be a succeeding period of probation before cure is confirmed in which the patient must show no signs of the disease, not only to the Wassermann test, but to a variety of other examinations intended to reach all the structures that syphilis is known to affect.

*"Today's World Problems in Disease Prevention." John H. Stokes. 1919.

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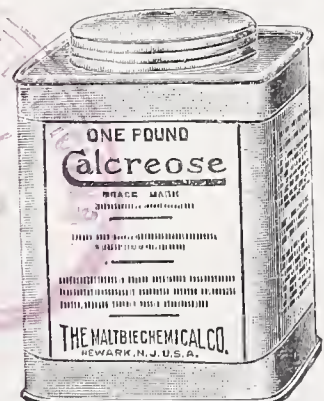
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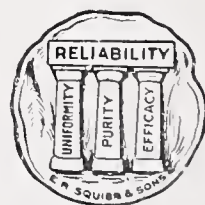
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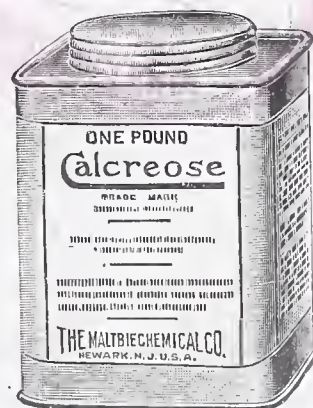
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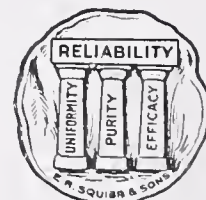
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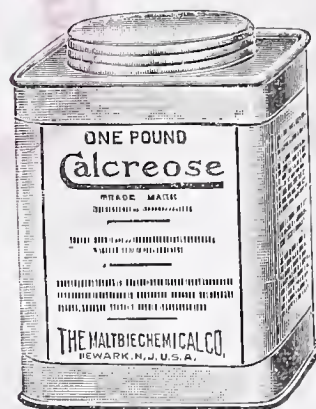
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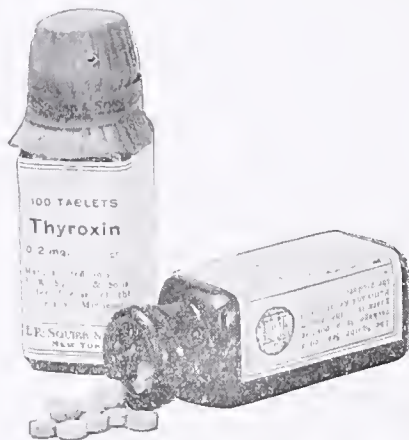
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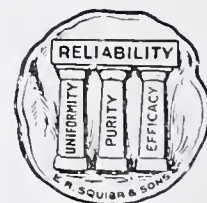
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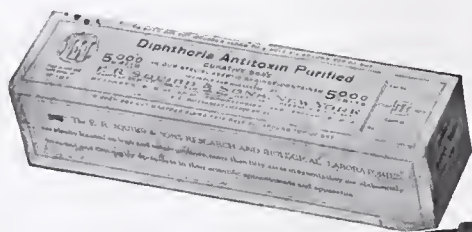
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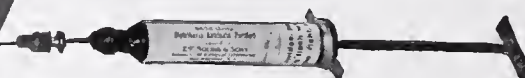
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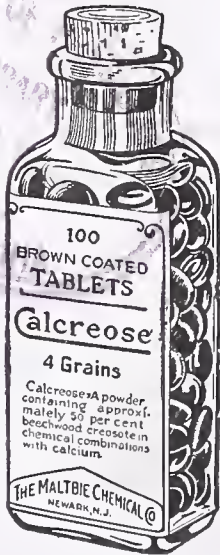
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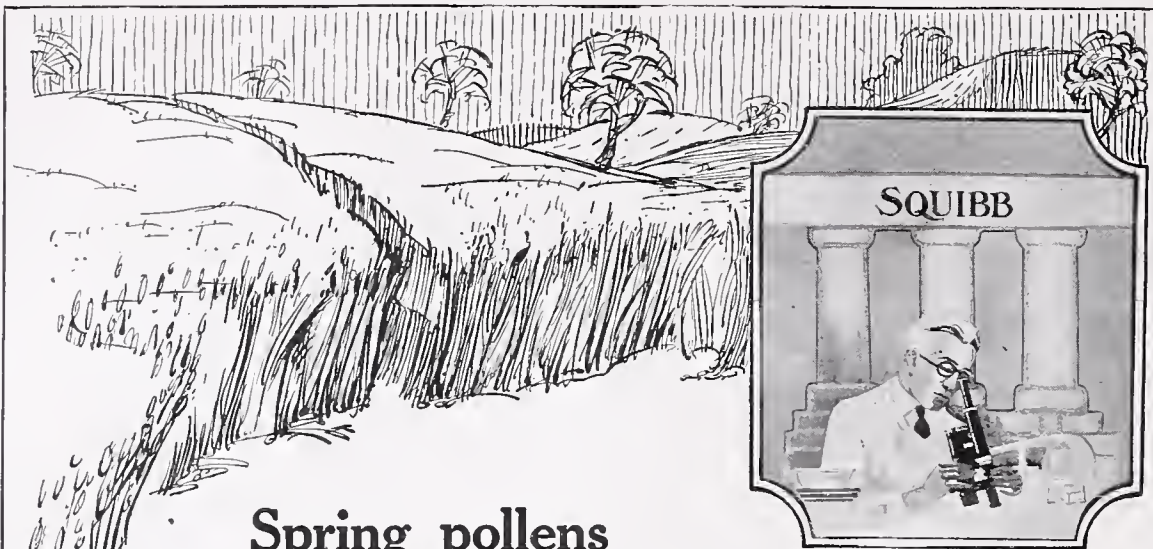
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